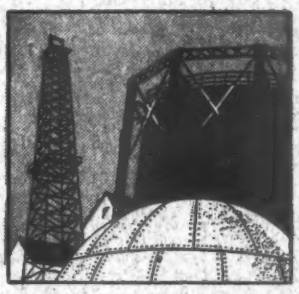
AMERICAN GAS ASSOCIATION MONTHLY



Natural Gas Problems
ALEXANDER FORWARD

♣

Campaigning in Denver for Househeating
F. MARION CHELF

♣

Home Service Among Canadian Utilities
JESSIE M. READ

Eighteen Awarded McCarter Medals in Brooklyn

Regulation In Our Time
J. PAUL KUHN

♣

Changing the Sex of the Gas Industry
FRANCES PRATT

♣

Artificial Lungs for Breathing Failure
MARIE HULSER

December, 1930

"Bound— Without Hope of Divorce"

THE relation of a public utility to its customers differs from that of every other merchant, for while the merchant has a pleasant business acquaintance with his customer, the public utility is married to him. Both parties are bound for life without hope of divorce.—Philip Cabot, Harvard Graduate School of Business Administration.

A Company is Known by Its Customer Contacts

Friends are made or lost at the contact points. Discourtesy, abruptness, lack of interest, selfishness, the "high hat" attitude and the "hard-boiled" manner are daily breeding personal grievances among customers.

How can this be stopped? How can contact employees be made to see the company's and the customer's point of view. How can they be made to think?

Not by orders or rules or regulations or preaching or exhortation. These have been tried and have failed. Something else is needed—some means of capturing the employee's interest and centering it on himself and his customer contact methods.

The A. G. A. Course in Employee-Customer Relations Points the Way

More than 3,500 contact employees of gas companies are now meeting in conference groups and discussing right and wrong methods of dealing with customers. Group leaders are directing the discussion, and every employee has a voice. Self-expression is thus encouraged. Interest is at a high pitch.

One-hour meetings are already running to two hours or more, so strong is the appeal of this work. The American Gas Association furnishes the leader's manual and six books as the prepared material for the Course. The companies do the rest, in their own way.

Get the Facts Now—Then Act

Familiarize yourself with this Course and its sound, practical, easy-to-use character. It requires six months to complete the Course. By starting now your employees can finish it before the 1931 vacation period interferes. Further information may be secured by addressing your inquiry to K. R. Boyes, A. G. A., 420 Lexington Avenue, New York, N. Y.

AMERICAN GAS ASSOCIATION MONTHLY

Allyn B. Tunis, Editor

Advisory Committee

FRANK LEROY BLANCHARD · HARLOW C. CLARK · E. FRANK GARDINER · F. HARVEY HOLDEN
EDWARD F. McKAY · CHARLES E. WETZEL · HOWARD F. WEEKS

VOLUME XII | DECEMBER, 1930 | NUMBER 12

CONTENTS

	PAGE
Our Own Who's Who—Louis Stockstrom	526
Natural Gas Problems ALEXANDER FORWARD	527
Campaigning in Denver for House Heating F. MARION CHELF	531
Artificial Lungs for Breathing Failure MARIE HULSER	534
Conservation of Natural Gas SCOTT TURNER	536
Movies Show Use of Gas in Rochester Plant J. B. NEALEY	538
Changing the Sex of the Gas Industry FRANCES PRATT	540
Regulation in Our Time J. PAUL KUHN	542
Eighteen Employees Get McCarter Medals in Brooklyn	548
Natural Gas Line Mileage Expanding Steadily	550
Home Service in Canada—Its Business in Utilities JESSIE M. READ	552
Convention Calendar	554
Gas Advertising's Job EARLE WHITEHORNE	558
Economic Aspects of Utility Merchandising Discussed at Dallas H. C. DAVIDSON	562
It's Not the Heat, It's the Humidity EUGENE D. MILENER	566
Gas Appliance and Equipment Developments	568
Monthly Summary of Gas Company Statistics	569

The Association does not hold itself responsible for statements and opinions contained in papers and discussions appearing herein.

Published Monthly by the

AMERICAN GAS ASSOCIATION

Publication Office, American Building, Brattleboro, Vt.
Editorial Offices, 420 Lexington Ave., New York, N. Y.

Entered as Second Class Matter at the Post Office at Brattleboro, Vermont, February 10th, 1922, under the Act of March 3, 1879.

Subscription Rate . . . . . $3.00 a Year

OUR OWN WHO'S WHO

Louis Stockstrom

◆

LXVII

◆

LOUIS STOCKSTROM is president of the American Stove Company and a founder of one of its divisions. Of Scandinavian descent, he was born in Germany and came to the United States in the early eighties, after having learned the machinist trade in Germany and Russia. His first occupation in America was as a machinist in Denver. Later, in St. Louis, he found a demand for gasoline stoves, which was not adequately filled by existing manufacturers. He started, in a small way, to produce stoves to supply this demand. This business grew rapidly and in 1902 formed one of the largest units of the American Stove Company, which was organized at that time as a consolidation of a large group of stove manufacturers. He became secretary of the company and chairman of the manufacturing committee at its formation, and actively supervised manufacturing activities until 1927 when he was elected president of the company to succeed his brother, Charles A. Stockstrom, who retired at that time from active service to become chairman of the Board of Directors. Louis Stockstrom is personally responsible for many of the developments in cooking appliances, both for gas and liquid fuel, and many of the important patents of the industry are the results of his efforts. At seventy-two he is keenly alert and interested in the activities of his company.

AMERICAN
GAS ASSOCIATION
MONTHLY

VOLUME XII | DECEMBER, 1930 | NUMBER 12

Natural Gas Problems*

By Alexander Forward

Managing Director, American Gas Association

Alexander Forward

DEVELOPMENT of the natural gas business is most spectacular and appeals to the imagination. Only a few years ago some of us who were rash enough to prophesy, were predicting a decline in the output of oil and natural gas which would restore the utilization of coal, stimulate the production of coke and other by-products, and create new problems in costs to the gas industry of raw materials. To those who would humorously remind us of the failure of these prophecies, we can but smile with the best grace we can muster and take refuge in the fact that in our predictions we were fortified by the best judgment and knowledge of geologic authority.

Having no desire to emulate Ajax, I shall not attempt to defy the lightnings of sarcasm by venturing any considerable amount of prophecy. I suspect it is safer to stick to the facts and from them draw a few conclusions.

Without discussing the various claims as to the location of the first discovery of natural gas in America, it is a fact that the first well actually drilled for natural gas was near the town of Fredonia, New York, in 1821. It was only twenty-seven feet deep and the product was used in 1824 as a source of light for residences in that town. The natural gas public utility industry was born in Fredonia in 1865 when a company was organized for the regular distribution of this product for domestic purposes.

Transmission of natural gas was of slow development and the first attempts seemed to have mainly resulted in failure. An instance is a wooden line twenty-five miles long, later abandoned. Wooden pipes of this type of construction were removed from the streets of Marietta, Ohio, after having been in the ground for seventy-three years. The first cast iron gas line, two inches in diameter, extended from a well a distance of five miles to Titusville, Pa., in 1872.

It is a far cry indeed from those days to the present status of nearly 80,000 miles of natural gas lines in the United States.

Within recent years the large discoveries of gas in the Monroe-Richland Parish Field in Louisiana, in the Texas Panhandle, in and near Oklahoma City and in Southern and Middle California have, coupled with fields in other sections of the United States, greatly enlarged the available supply.

The nature of the oil business is such that in many fields the owner feels compelled to produce as rapidly as possible, else his neighbor may recover a portion of his oil from the same pool underground. Since in many instances gas, often in larger volume and pressure, accompanies the production of oil, this results in increased production of gas, quite often in excess of the facilities for proper and economic handling and, lacking an immediate market outlet, large quantities of natural gas are consequently lost. Only where large tracts of land are in the hands of a single interest, or where a number of oil producing companies have entered into mutual agreement on a unit plan of production, is it possible to conserve, seal up or otherwise retard production.

As a natural result of this situation, natural gas is used in large quantities for industrial operations. The use of such a valuable natural fuel as gas for some of these purposes, such as the manufacture of carbon black, may be seriously questioned and the generations to come will have cause to regret that the nature of the development above referred to precluded more efficient utilization.

However, it cannot be said that nothing is being done to prevent waste. California has a conservation law in operation; regulations in Louisiana and Oklahoma are becoming increasingly effective and are being sustained by the courts. Texas is at work on the problem. For the

*Address delivered before the National Association of Railroad and Utilities Commissioners, Charleston, S. C., November 12, 1930.

most part the producers are cooperating whole-heartedly in statutory, regulative and self-imposed restrictions.

In addition to proration and to limitations upon production, the storage of natural gas in underground reservoirs is regarded as a very important measure of conservation. This practice permits the withdrawal of gas from regions where competitive drilling exists and its transportation to places where it may be stored in underground fields and retained for future use. There are also technical methods for further conservation which are being carefully studied by engineers of the American Gas Association, of the Bureau of Mines, of the gas companies and of other agencies.

With what I trust is pardonable pride I may say that the American Gas Association, recognizing the responsibility of the industry to prevent so far as practicable wastage of this most valuable fuel, is on record as pledging its resources to effective conservation. The Natural Gas Department of the Association, in cooperation with the Bureau of Mines, and in which other agencies will be invited, is proceeding upon a plan carefully worked out by its committee, containing no snap judgment or chimeric schemes but contemplating a gradual unfolding of the picture and logical development of practical methods.

Transmission lines beyond three hundred miles in length were only a few years ago deemed impractical. Yet today a line is under construction from the Texas Panhandle to Chicago, a distance of nearly a thousand miles. There is talk of conveying gas to other cities in the Great Lakes area. Lines have been built and are in operation to Kansas City and Denver. Natural gas is now conveyed from the districts in the San Joaquin Valley to San Francisco, and construction already planned and under way make it practically certain that the entire State of California will be served for years to come under adequate conservation with natural gas. In large areas of the country manufactured gas has been displaced, and in other areas it is expected to supplement manufactured gas.

This displacement has already taken place in Texas for, with the introduction of natural gas at El Paso, every community in Texas is now served with this fuel for all heating purposes. It is said that in some large Texas cities it is impossible to buy a pound of coal; there is no market for that commodity. Also there is no smoke there, with its bad effects on health and its economic damage.

This fuel is now being transported from the Monroe-Richland Parish Field in Louisiana to the cities of Alabama and Georgia as well as to St. Louis and intermediate points, including Memphis, and it is about to reach the first city in Florida, Pensacola. Lines from the West Virginia-Kentucky field will carry natural gas to the Atlantic Seaboard cities of Virginia and to the National Capital in Washington. It seems likely that the eastern and southwestern producing fields may be united by tie-ins.

I promised not to prophesy. All I can say is that no one can tell what the near future may bring forth in the further extension of natural gas in public utility service. What is certain is that networks of pipe lines already extend over considerable portions of the North American Continent, and that there will be large extensions of this network within the next year or two. At some more or less remote day when the natural gas supply approaches depletion and becomes consequently too expensive for competition with other fuel, some of its pipe lines may be used for long distance transmission of manufactured gas.

In the past seven years there have been offered and sold to the public, natural gas securities to the total of $375,000,000 and it is probable that including the financing done directly by the companies themselves and not offered to the public, three-quarters of a billion dollars have in this period been invested in the production and transmission of natural gas.

The average annual increase in sales for the past ten years has been ten per cent but this rate of growth was greatly accelerated toward the end of the ten-year period. In 1929 a total of 1,917,693,000,000 cubic feet of natural gas was produced and marketed, which represented a gain of 22 per cent over 1928 as compared with an increase of 8 per cent for 1928 over 1927. In 1929 there was an increase of 772,000 domestic consumers of natural gas. However, only 19 per cent of the total production was used in 1929 for domestic purposes while the other 81 per cent is divided among various fields of utilization; 45 per cent of the 81 per cent as fuel for boilers and engines in oil and gas field operations and for operating natural gasoline plants; 17 per cent was burned in the manufacture of carbon black, 7 per cent was burned to generate electricity in public utility power plants, 7 per cent was burned at petroleum refineries, and the remaining 24 per cent was used in general industrial purposes.

Texas last year became for the first time the leading natural gas producing State, Oklahoma taking second place and California third. The total number of domestic consumers at the beginning of this year was 5,116,000 which means that no fewer than 20,000,000 of our population are being served with this fuel.

In fact, it is difficult to over-estimate the importance of this development. As our President, Mr. Mullaney, said at the recent Annual Convention of the American Gas Association the development of natural gas may very possibly be the most widely significant in its economic aspects that has ever arisen in the entire public utility business, notwithstanding the marvelous developments due to electrical generation and distribution. Mr. Mullaney went further and said that it may even turn out that the natural gas business in its industrial and economic aspects will take its place in industrial history as the most significant and important development of the Twentieth Century.

Inevitably such a gigantic and far-reaching development brings with it new problems. I do not propose here to discuss the technical problems nor even those touching upon the economics of conservation.

Those relating to regulation are of prime importance, and upon them I shall venture a few thoughts of my own.

First, as to rate making. There is an impression that natural gas is a free gift of nature, and that it can be obtained and distributed with little cost. This is not a fact. Production, transmission and distribution entail tremendous costs in acquiring and developing natural gas and oil producing fields. Large sums must be continually invested in the purchase and maintenance of adequate reserves for the future protection of customers. The expenses of drilling and exploration entail great risks, and the investment therein is frequently a total loss when dry holes result, and it is necessary to charge such exploration losses against producing wells. Hundreds of millions of dollars are invested in modern transportation systems to make the product available, and one pipe line now under construction alone, it is said, will cost 125 to 130 millions of dollars. These investments must earn a return adequate to fully compensate the investors in the industry.

Of course, there is always the additional expense of local distribution to domestic and industrial customers, which is the same as that encountered in the service of manufactured gas. There are the same costs of bookkeeping and meter reading, of servicing the appliances, of adapting the product to the customer's needs and of adequately acquainting him with the uses to which this valuable fuel may be put effectively in the home and in industry.

While natural gas can be taken from the ground at much less cost than coal gas or water gas can be made, the enormous transportation costs when over long distances greatly increase the expense of delivery to local distribution systems. This factor, coupled with development of new producing areas, will eventually determine the economics of natural gas extensions, for obviously a point is always reached where gas can be manufactured more cheaply than it can be transported.

Now, when a company changes over from manufactured to natural gas, if its rates per thousand cubic feet to customers are substantially lowered that means that its gross receipts are correspondingly decreased and all distribution and utilization expenses, or the major costs, go on just the same. The company must maintain a standby manufacturing plant in condition to guard against any interruption to supply and thus to safeguard its customers' interests. Again, natural gas is of considerably higher heating value than the average manufactured gas, the customer uses fewer cubic feet to do identically the same work, and this again reduces the revenue of the operating company without decreasing its operating expenses. The advent of natural gas stimulates the demand for gas house heating, which has a poor load factor, requiring the company to provide and maintain throughout the year large investments upon which earnings can be had for in most instances only a few months, and in some cases only a few days.

In some instances, the result has been that the local gas company is so handicapped by lack of revenue as to be unable to adequately continue the best service to its customers. Manifestly it is the duty of the gas company to fully inform regulatory bodies with this situation, and it stands to reason that when this is done, the regulatory authority will see to it that the utility is permitted to charge such rates as will earn revenue to maintain and insure complete and satisfactory service to the public and to attract new capital for necessary extensions. It is obvious that there should be adequate rates to domestic customers, by far the most expensive class to serve, to insure the integrity of the investment, and, until such time as new business can be attached through the addition of new markets or larger consumption by existing markets, the lowering of gas rates is not in the public interest.

The transmission of natural gas by pipe line over long distances constitutes in many instances an interstate movement. This movement has assumed magnitude with a constantly increasing development of the natural gas business. A regulatory commission may feel that it is lacking in adequate power because it cannot regulate in many such instances the price which the local distributing company must pay for the gas which has been transported to it from another State.

It seems certain, however, that the commission may from accurate and authentic sources secure information which will enable it to determine whether the wholesale price of gas at the gate of the distributing city is overreaching and clearly out of line with reason. The contract price paid at the gate by the local distributing company cannot be arbitrarily ignored by the commission in fixing the rates for local distribution, since for instance it may be the lowest gate rate the distributing company can secure from a reliable pipe line company possessing adequate supply and reserves, and the cost of such gas is an operating expense like other operating expenses, such as the cost of coal. If, however, it can be demonstrated that the amount paid for the natural gas transmitted in interstate commerce at the gate of the distributing city is unwarranted, manifestly unreasonable, or overreaching, it appears to me, from such

With what I trust is pardonable pride I may say that the American Gas Association, recognizing the responsibility of the industry to prevent so far as practicable wastage of this most valuable fuel, is on record as pledging its resources to effective conservation. The Natural Gas Department of the Association, in cooperation with the Bureau of Mines, and in which other agencies will be invited, is proceeding upon a plan carefully worked out by its committee, containing no snap judgment or chimeric schemes but contemplating a gradual unfolding of the picture and logical development of practical methods.—Alexander Forward.

study of the cases as I have been able to make, that the commission is not without power and authority in fixing the local rates to amply and fully protect the consumers of natural gas.

As I view the situation, any burden which may be cast on the State commissions in respect to the charge of the wholesale transporting company for its delivered gas to the distributing company, is a minor matter so far as the public interest of the consumers is concerned compared with the public disadvantages which must in my opinion result from the establishment by the Federal government of price control of this commodity on the ground that it is moving in interstate commerce. The business of producing gas is a different business from that of the railroad or telephone utilities. I think we may frankly admit that there is an element of chance in connection with the transportation of natural gas over long lines which must be taken into consideration in judging of that industry, and failure to recognize the elements of difference in this respect might well destroy the incentive to the producer of natural gas to continue exploration, development, and investment upon which the future usefulness of the natural gas indusry in a great field must necessarily depend.

May we not also take into view the practical effect of Federal commission regulation over this natural gas industry and price fixing thereof? I cannot but believe that the establishment of such jurisdiction in a Federal bureau must necessarily to a great degree curtail and hamper the jurisdiction which the various State commissions, the local bodies, now exercise and are much better fitted to exercise than any Federal body. It is my opinion that even local jurisdiction and the matter of local rates will be affected the moment that Federal government begins to control the price in interstate commerce of natural gas. The establishment of such Federal jurisdiction is one more step toward National control of local matters. If in general, when the State commissions, the local bodies, are fixing their rates to local consumers, their jurisdiction must in all cases be immediately thrown back upon the question of the price for transmitted natural gas, which price is dependent upon the act of some Federal commission or body, will it not be a fact that the jurisdiction of the local body, will necessarily be deferred until the gate rate has been fixed at Washington? Furthermore, any rate fixed either by the Interstate Commerce Commision or some other regulatory body will, if the matter has become one of serious contention, be appealed to the courts, and while it rests with the courts for determination the local State commission will be delayed in exercising their important jurisdiction.

I prefer in referring to this matter to do it in a general way and as far as I can from a practical standpoint. My own thought is first, that the fact that natural gas may move in interstate commerce and the contract price fixed for its delivery to local distributing companies cannot be arbitrarily interfered with, will not unduly embarrass the State commissions in the exercise of their necessary and regular jurisdiction. Second, that if cases of abuse shall arise in connection with this matter, they are subject to solution and the State commissions are not without protective power. Third, that it would be unfortunate indeed if, in order to meet sporadic cases which may arise and prove somewhat difficult of solution, there shall be in effect, if not in open declaration, the substitution of Federal jurisdiction for all matters connected with the gas business when natural gas opens a new field or is substituted for manufactured gas.

Another point to be considered is that by far the greater portion of the natural gas transported from the field to market is sold for industrial uses. A large and steady volume of this type of business is necessary to keep the pipe line packed and pressures sufficient to meet both the seasonal and daily needs of the greatly fluctuating demands of domestic and small commercial consumers and to balance the poor load factor of house heating. As I have said, 81 per cent of the natural gas sold today is for industrial use, which has a far better load factor than domestic use. In order to secure this industrial market for natural gas it must meet the most intensive competition of every other form of fuel, such as cheap industrial coal, semi-anthracite, anthracite, oil and even propane and butane. Any form of pipe line rate regulation would tend to very greatly limit if not actually destroy the possibility of securing and retaining the industrial market, upon which the natural gas company depends for the regulation of the volumes and pressures, as well as a large portion of its assured operating revenues, and upon which depends almost entirely the assurance of uniform service and low costs to domestic and commercial users.

The same gas, passing through the same pipes at the same time, has different values for its various uses, and in its major aspects the rates it secures are competitive and self-regulating and in no sense monopolistic. The regulation of the price of gas to the distributing company buying the supply in interstate commerce is of minor importance, since the consumers of at least 81 per cent of it will not use it unless it is sold at a price at which it competes with other fuels.

Domestic gas costs more to deliver at the city gates than does industrial gas, because of its poor load factor, not only to the line but to the producers in the field. Often the industrial gas is sold with the right to cut off the supply in favor of the domestic consumer.

Two brief quotations, please. First, from an address by a distinguished member of this Association, Hon. J. Paul Kuhn of the Illinois Commission, at the recent convention of the American Gas Association:

"Again, a federal organization, which is sufficiently manned to properly conduct all investigations now being carried on by the state bodies, would be so cumbersome and so unwieldy that intimate understanding of the problems would scarcely ever be obtained. Individuals, peculiarly possessing knowledge which would be especially helpful in the solution of those problems, could scarcely ever be heard, and as a result, con-

(Continued on page 554)

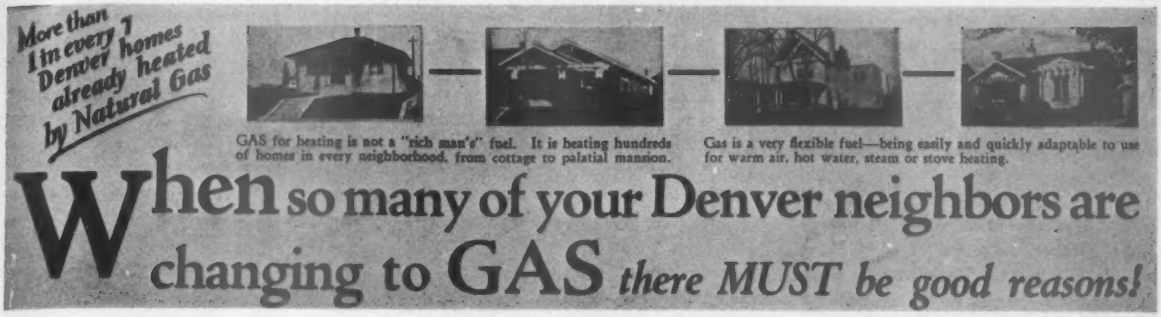

More than 1 in every 7 Denver homes already heated by Natural Gas
GAS for heating is not a "rich man's" fuel. It is heating hundreds of homes in every neighborhood, from cottage to palatial mansion.
Gas is a very flexible fuel—being easily and quickly adaptable to use for warm air, hot water, steam or stove heating.
When so many of your Denver neighbors are changing to GAS there MUST be good reasons!

Illustration Used in Booklet

Campaigning in Denver For House Heating

By F. MARION CHELF,
Superintendent, House Heating Division,
Public Service Company of Colorado

WITH the advent of natural gas in Denver, Colorado, which occurred in July, 1928, the residents of this city were given a reduction in rates. Naturally this upset the existing ratio of prices with comparative fuels and gave gas an opportunity in many fields. How we capitalized on this factor in the house heating field makes an interesting story.

At the beginning of the year 1928 we anticipated the coming change with the building-up of a sales organization to develop the house heating load. Promising sales representatives were selected and first sent into the field with the estimating crew under the supervision of an engineer, and were taught how to estimate for gas consumption and how to recognize good and bad heating plants, as well as other general information concerning the engineering end of gas heating. At the end of this course, which usually required nearly a month, those that were qualified were graduated into the sales representative class.

The house heating sales department was finally built up to thirty-two representatives calling on residences only. In arranging commissions, territories, etc., it was always borne in mind that in sales campaigns or straight selling the predominating factor was the type of sales representative used. The only way to obtain clean, alert and aggressive salesmen is to provide terms by which they can obtain adequate compensation when they put forth a great amount of effort. Because of the aggressiveness, the high-class house heating salesman closes more than half of his sales in the evening after dinner, and sales made in the office are practically unknown.

When natural gas came to Denver there were only about 400 residences that were heated with gas. Since then we have brought the total up to over 8,000. This is a very significant fact when one considers that 50,766 represents the total number of homes in Denver, exclusive of apartment houses, stores, etc.

Special newspaper advertising campaigns were inaugurated to break down sales resistance and prepare the minds of the prospects for the sales representatives. It is a well-known fact that the average conception of gas fuel bills is considerably above the actual, so a series of newspaper advertisements ran weekly from March to July of 1929, featured letters written to the company by individual home owners who were using gas, showing a photograph of their house, stating the number of rooms, and giving the amount of the gas bills. We believe this campaign educated the public as to actual heating costs and was instrumental in netting the company hundreds of new installations.

Within the past year there have been two outstanding sales campaigns, backed with local newspaper advertising, pamphlets, circulars, etc. In the early fall of last year, 1929, a special inducement was made in the form of a very low price on the conversion jobs in combination with storage water heaters. A hand control gas burner for any furnace was offered at $40 together with an automatic water heater at $60 which made a total price of $100 for the equipment installed. Long time credit of approximately 40 months was also given. The result of this campaign was somewhat different from that anticipated, in that very few took advantage of the low-priced hand control job, but many were attracted to purchase automatic equipment.

During all this time we had been testing, in our own laboratories, most of the standard heating equipment selling in America and finally standardized upon one automatic gas burner because of its high efficiency, appearance, comparatively low cost, adaptability to a wide range of conversions, and rugged construction. We believe the safety pilot on this burner to be unexcelled, its function, of course, being to automatically turn off the gas should the pilot go out for any reason. In Denver we prefer to call the safety pilot the "economy" pilot when discussing it with our customers for the reason that the name "safety pilot" induces fear in the customer, and the same idea can be as readily explained to

the customer on a basis of saving gas by the use of the economy pilot in case it goes out.

Early this year we advertised free trial of these house heating burners and at the same time our sales representatives made a special drive. This campaign lasted one month and resulted in the installation of nearly 100 of these automatic gas burners on trial. Practically all that were put in were sold. Thousands of pamphlets have been given out, depicting gas as the ideal fuel and as the economical fuel.

Each representative is required to furnish his own car and is employed on a commission basis with a drawing account. Drawing accounts are divided into two classes, class A—$150 per month, and class B—$90 per month. A class A man automatically drops to class B when his monthly commissions fall below $150 for two months in succession. The commissions come under three divisions:

(1) A percentage of the profits on equipment sold. These profits narrow down in proportion as the sales representative accepts old equipment as "trade ins," or attempts to make special discounts, etc. Also, for the purpose of promoting clean sales, losses on returned equipment are levied against the profits.

(2) A commission paid by a flat sum per job representing a gas revenue commission.

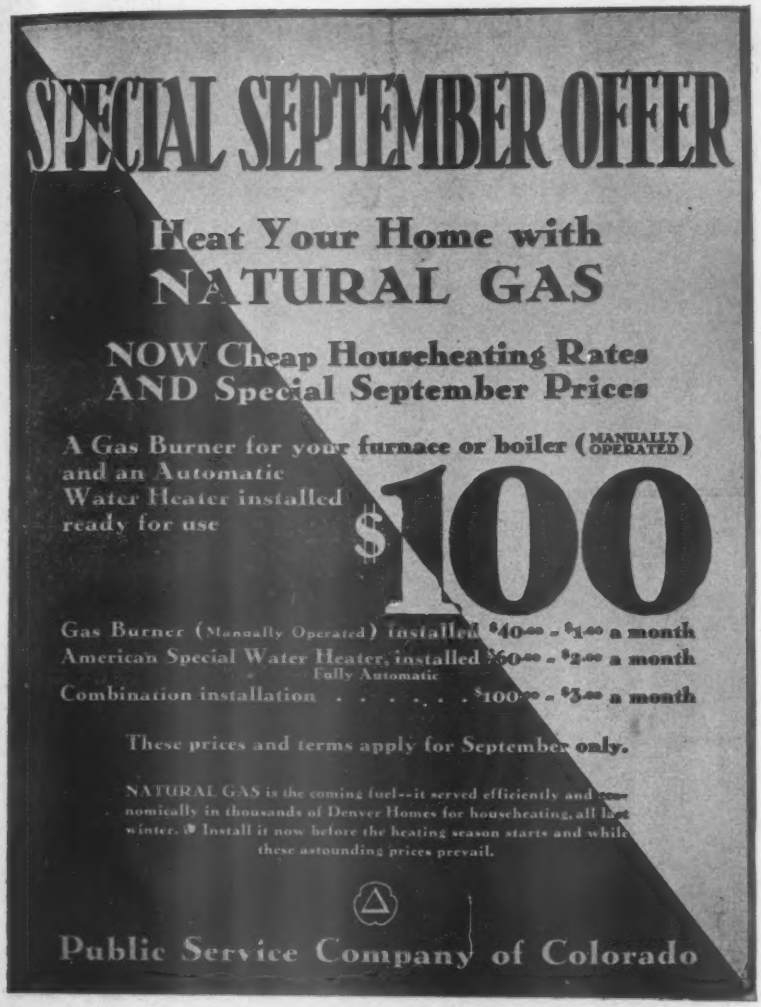
(3) A commission is also paid for advance cash payments with the orders.

In formulating territories all of Denver was divided into thirty-two parts and each of the thirty-two representatives was assigned and made responsible for house-heating sales in one of these sections. In an attempt to average the individual territories and sales possibilities and to induce a high class of men to work happily in districts of the more modest homes, these latter sections were made larger and contained more homes. In the more exclusive districts the number of homes were less in proportion. The average number of homes in individual sections is 1,660 and ranges from 900 up to 3,000.

Water heaters, room heaters, ranges, etc., are handled by a separate department under the supervision of C. A. Bigler. The sales plan there parallels that of the house-heating division, thirty-two representatives covering the same thirty-two territories. A small commission is paid to these men for any assistance rendered in selling house-heating units.

Over 3,600 Gas-Heated Homes in Denver
Smokeless, Ashless Carefree
Gas Heat
Is Now Being Used in Thousands of Denver Homes
MR. C. E. CARPENTER, whose home is shown above, says enthusiastically of his house heating installation:
FOR the past eight months the gas bills in Mr. Carpenter's home have averaged $21.32 for cooking, water heating and housebeating.
An Idea for Mother's Day
Give Her a Convenience of Year-Around Pleasure by Installing Gas Heat. You Can Afford It.
Public Service Company of Colorado
Over 4,000 Gas Heated Homes in Denver
House Heating With Natural Gas
has proven its worth. Thousands of installations have been made. Among them is that of R. W. Ormsby, 2642 Irving Place, whose home is pictured here.
Mr. Ormsby writes that his gas-fired furnace, water heater and kitchen range have given COMPLETE SATISFACTION —also additional house room and yard space! His bills for complete gas service—water heating, cooking and house heating—averaged $13.60 a month for his five-room house since October 1, 1928.
The conversion to gas equipment in Mr. Ormsby's home makes available the coal bin for fruit storage purposes. Furthermore, he has torn down his ash pit.
Again, let us suggest: NOW IS THE TIME to equip your house with a gas furnace and automatic water storage heater. We are prepared to give immediate service.
Telephone TAbor 1122, or visit demonstration room at
Public Service Company of Colorado

Two Series of Advertisements used in Denver newspapers during Campaign


SPECIAL SEPTEMBER OFFER
Heat Your Home with
NATURAL GAS
NOW Cheap Housheating Rates
AND Special September Prices
A Gas Burner for your furnace or boiler (MANUALLY OPERATED)
and an Automatic
Water Heater installed
ready for use
$100
Gas Burner (Manually Operated) installed $40.00 - $1.00 a month
American Special Water Heater, installed $60.00 - $2.00 a month
Fully Automatic
Combination installation . . . . . $100.00 - $3.00 a month
These prices and terms apply for September only.
NATURAL GAS is the coming fuel--it served efficiently and economically in thousands of Denver Homes for housheating, all last winter. Install it now before the heating season starts and while these astounding prices prevail.
Public Service Company of Colorado

A full-page Advertisement used in Denver Newspapers

Men in the house-heating division also render any help they can in promoting sales in the other department but receive no commission therefrom. This close cooperation has stimulated sales in both divisions quite materially.

This year we are working these territories more intensively than ever and will be aided considerably by both the estimating surveys and the representatives' canvass book surveys. The canvass book surveys have classified all the houses in the city according to their type of heating plant, whether warm air furnaces, steam or water boilers, or heating stoves. Accordingly, three types of pamphlets suited to the furnace, boiler or stove were prepared and are being mailed to these prospective customers. Thus, furnace literature was sent to all prospects now using warm air coal furnaces, boiler literature to all using boilers, and gas circulating stove literature to all those using coal stoves. Each envelope contains a return postcard which bears this statement:

"Mr. Blank, representative for your gas company, devotes his entire time to the gas-heating requirements in your neighborhood. By virtue of his specialized training he is qualified to furnish accurate information. By mailing this card, you may have him arrange to call at your convenience and consult with you on any phase of your heating problems without obligation."

Even with natural gas about 35 per cent higher than coal where conversions are used, we expect that eventually the great majority of Denver house heating will be done with gas.

Industrial Publicity

The Publicity Committee, Industrial Gas Section of the American Gas Association, directs attention to the following articles, recently published:

"Creative Art Invades Industry." *Iron Age*, April 10, 1930.

"Combination of Gas Refrigerator and Gas Range." *Industrial Power*, April 1, 1930.

"A Modern Die Casting Plant."

"Gas for Cooking." *Institution Buyer*, April 1, 1930.

"Conveyors Serve Trimming Presses." *Iron Age*, May 29, 1930.

"Gas Furnaces Used in Rolling and Forming Pipe Couplings." *Oil Weekly*, May 16, 1930.

"Develops Grain Flow Control." *Iron Trade*, June 12, 1930.

"Foundry Pours 4000 Tons Monthly." *Iron Trade*, May 22, 1930.

"Controlling the Grain Flow in Forging." *Fuels and Furnaces*, June 1, 1930.

"Cleaning and Bake Finishing Pressed Metal Parts." *Ind. Finishing*, May 1, 1930.

"Installation for Production of Galvanized and Japanned Strip Steel." *Fuels & Furnaces*, July 1, 1930.

"Modern Tile Plant Uses Continuous Gas-Fired Kilns." *Ceramic Age*, August 1, 1930.

"Natural Gas Serves Denver Hospital." *Ind. Power*, April 1, 1930.

"Apparatus Saves Foundry Labor." *Iron Age*, August 14, 1930.

"Ford Makes Own Steel for Automobiles." *Ind. Power*, August 1, 1930.

"Continuous Oven Reduces Core Losses." *Foundry*, August 15, 1930.

"Furnaces for the Carburizing Department." *Machinery*, September 1, 1930.

"Controlling the Grain Flow in Forgings." *Heat Treating & Forging*, July 1, 1930.

"Strip Steel Mill of the Acme Steel Co." *Blast Furnace & Steel Plant*, August 1, 1930.

"Gas Fired Boiler for Asphalt Plant." *Roads & Streets*, August 1, 1930.

"Heat Fits Unit System of Production at Dresser Plant." *Ind. Power*, September 1, 1930.

Artificial Lungs for Breathing Failure

Marie Hulser

FOSTERED by the Consolidated Gas Company of New York, the Drinker respirator, an outstanding contribution by modern science to life-saving, has come into much deserved publicity during the past several months.

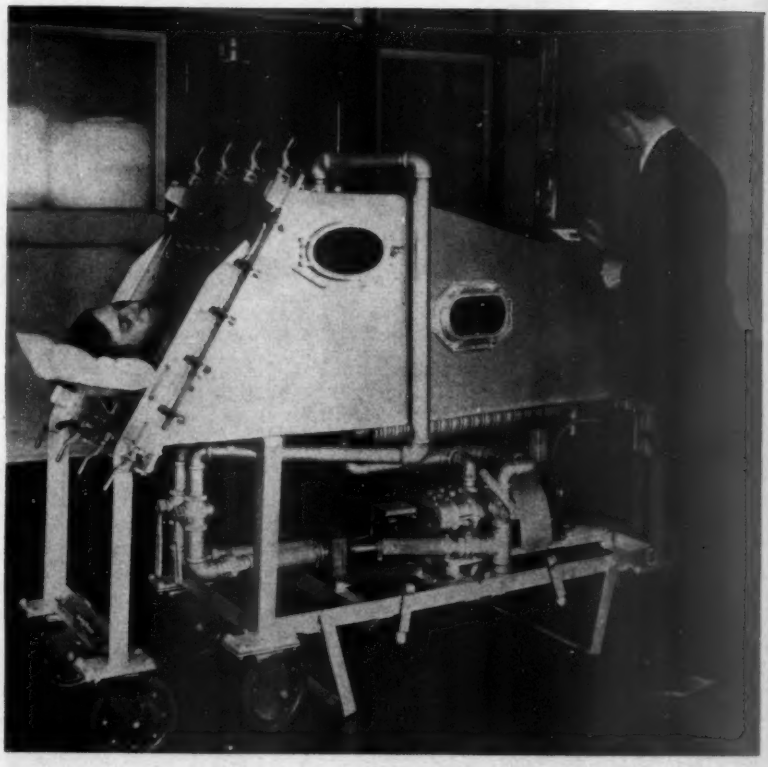
Delegates to the American Gas Association Convention, at Atlantic City, N. J., in October, were given an opportunity to see, touch and even receive trial treatments in a demonstration of this respirator, which was developed by Philip Drinker, Ch.E. of the Harvard School of Public Health, showing how a patient whose own respiratory function has failed, is enabled to breath.

The machine is not intended as a substitute for present methods used in the treatment of mild gas asphyxiation or electric shock cases, which are cared for at the scene of the accident through the medium of mechanical inhalators and the well-known Schafer prone pressure method of resuscitation.

In search for a mechanical device which could carry on respiration work for over a longer period than human administration is advisable or possible, in cases of prolonged monoxide poisoning or electric shock, the Drinker respirator was evolved, under the sponsorship of the Consolidated Gas Company of New York. Its capabilities have proved to be even more far reaching than it was originally hoped for, and the machine now does its most creditable work in saving the lives of many otherwise hopeless cases of infantile paralysis, drug poisoning, alcholic coma, submersion and the like.

A small respirator has more recently been developed by Professor Drinker for the treatment of prolonged asphyxiation in new-born babies.

The most common kind of breathing failure comes with severe infantile paralysis, when the lung muscles become paralysed and difficulty in breathing takes place.



By means of an electrically driven pump and valve arrangement, changes of air pressure are induced within the respirator. In this way moderate degrees of accurately measured negative pressure are made to alternate rhythmically with atmospheric pressure.

By MARIE HULSER

Editor, Household Information Service, American Gas Association

To illustrate a specific case of recovery: In a desperate condition of paralysis a patient was removed to a hospital which had a Drinker respirator. He was immediately placed in the machine. The following morning on being taken out his breathing still was so weak that after three or four minutes he begged to be put back again. It was evident that he could not live without the aid of the respirator. On the fourth day the patient, still in the machine, was distinctly easier and he could remain without this aid for twenty minutes. On the fourteenth day the patient was comfortable for half an hour outside, until gradually his time in the respirator was reduced daily. When the patient was discharged after being in the hospital eleven weeks and a half, during four of which he was in the respirator constantly and during six more of which he was in two hours a day, his breathing was entirely normal.

The apparatus, of a torpedo-like appearance, works as a mechanical lung. It is really quite harmless looking, and its operation surprisingly simple. The patient is placed in the metal box of the respirator, with his head protruding from one end through a snugly

The apparatus, of torpedo-like appearance, works as a mechanical lung. The patient is placed in the metal box with his head extending through an airtight rubber collar. When the respirator is closed the body is practically hermetically sealed.

fitting rubber collar. This collar can be stretched to fit the neck of a large man or shrunk to fit that of a two-year-old child. When the respirator is closed, the body is practically hermetically sealed, with the head exposed to room air.

By means of an electrically driven pump and valve arrangement, changes of air pressure are induced within the respirator. Thus, moderate degrees of accurately measured negative pressure are made to alternate rhythmically with atmospheric pressure. When negative pressure is applied, air at atmospheric pressure enters the respirator through the patient's nose and mouth; it is drawn into the lungs and the chest expands. When the negative pressure within the respirator returns to normal the elastic coil of the chest produces expiration.

Volume and rate of breathing are under constant control by the attending nurse or physician and may be changed at will. The movements of the patient's chest can be observed through the side port-holes of the apparatus.

A quite unexpected advantage of the respirator is that patients can eat, drink and sleep while the apparatus is in operation, so naturally does it imitate natural breathing. In several cases, where at the time of hospital admission a patient was not in urgent need of artificial respiration, the effect of the assistance rendered by the machine made it possible for him to sleep where breathing difficulty would have otherwise made it impossible. The patient slept hardly at all outside the respirator, but would fall into a deep sleep as if exhausted when the breathing assistance of the machine was given him.

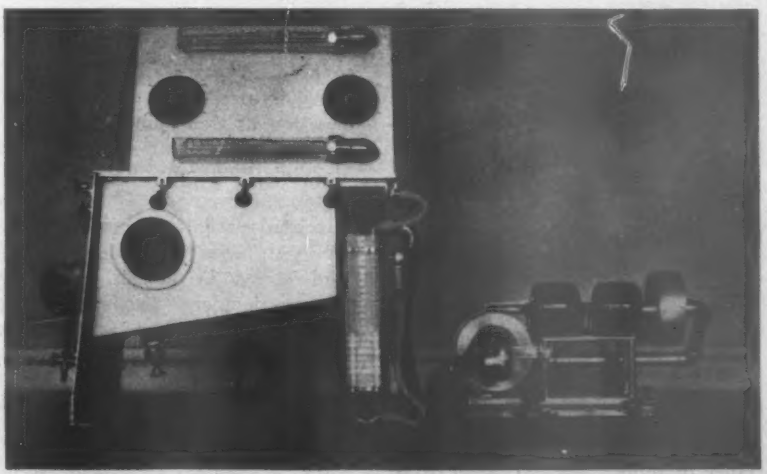
The operation of the baby respirator is much the same as that of the larger one, although its cases are those of new-borns who make no attempt to breathe although the heart is beating vigorously. The problem then is one of effecting a respiratory interchange sufficient to meet the needs of the infant during this critical period; for it is quite likely that certain of these deeply asphyxiated infants will finally develop a normal respiratory activity, if their lives can be prolonged long enough.

Thus the Drinker apparatus, which has demonstrated its success with adults and children suffering from acute respiratory failure, has been carried out in miniature. The usual method of inducing and maintaining artificial respiration such as slapping, swinging and flexing of the body are dispensed with; nor is the child subjected to any sudden shocks, such as tubbing in cold water and the like. Pulmonary infection and the danger of lung rupture from excessive forceful mouth insufflation are also avoided. In fact, the baby is subjected to no physical force which cannot be accurately measured and controlled.

From experiments and clinical studies it is believed that the Drinker respirator in its additional use offers the safest, simplest and most scientific method for treating asphyxia of the new-born.

About 14 adult-sized respirators were in use in New York hospitals and 8 in Boston hospitals on November 10. Twelve hospitals in Philadelphia and suburbs soon will be equipped with them. This Philadelphia plan is to be carried out through the cooperative efforts of the United Gas Improvement Company, and the Philadelphia Electric Company.

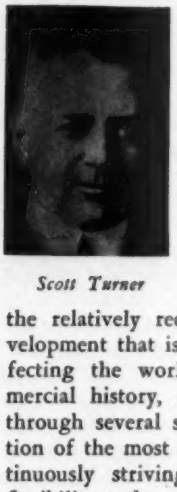
(Continued on page 551)



The Drinker respirator, developed now in miniature, will find an additional use for prolonged asphyxiation of the new-born. In the treatment of infants who do not respond to the usual respiratory stimuli at birth, the respirator is particularly applicable.

Conservation of Natural Gas*

By SCOTT TURNER
Director, United States Bureau of Mines



Scott Turner

TO be successful, human exertion employed for the creation of value requires power and heat; the ability to produce concentrated power in great quantities has resulted in the relatively recent industrial development that is so profoundly affecting the world. In our commercial history, we have advanced through several stages in the selection of the most suitable fuels, continuously striving to increase the flexibility and range of energy-transmission.

The easy distribution of light, power and heat is the leading factor in the decentralization of industry which promises to correct some of the serious evils that have followed in the footsteps of our commercial development. The distribution of fuel in quantity in so convenient a form and with such an attractive reliability-factor as can be had with gas, meets the modern conception of efficient service.

Natural gas has been used in this country for more than a century, but recently it has attained a prominence far in excess of anything known in its earlier history. We may consider that we are now getting into our real stride in the utilization of our natural-gas resources.

In a country like the United States, wherein we are accustomed to mammoth achievements, we may be inclined to accept casually the noteworthy, technical and economic advances which have resulted in the expansion of natural-gas distribution. About three years ago, the transmission of natural gas a distance of more than 250 miles from its source was first accomplished, and this was really a noteworthy engineering feat. Today, this useful commodity is being transported twice that distance, and lines are being laid which will carry gas more than 900 miles from the points of occurrence. Let us not take such outstanding improvements too much as a matter of course; the industry should be congratulated on its long steps forward.

Improvements in mechanical devices used in pipe-line construction have contributed to wider distribution. Ditching machines have replaced pick and shovel methods; tractors and other machines especially designed for the work are used in handling pipe; automatic field-welding processes have been developed; improvements in pipe manufacture and quality of material have increased our ability to transport gas under high pressures. These are some of the engineering contributions.

On the economic side, company-surveys have indicated that assured supplies are available to meet certain new demands; with this knowledge as a background, the industry has received the needed financial support. By creating an increased demand for steel products, the construction of these pipe lines has in itself been a factor of social and economic importance.

Recent developments are largely associated with three principal gas-producing areas: The Monroe-Richland region in Louisiana, serving the Southeastern portion of the country; the territory including the Texas and Oklahoma Panhandles, Southwestern Kansas and adjacent areas which may be combined to serve the Central United States; and the California fields, furnishing gas for distribution on the Pacific Coast. While developments in the Rocky Mountain region indicate the presence of major supplies of gas, as yet these have not been brought to anything like complete development. From the region surrounding the Texas Panhandle, lines are now being built to serve Indianapolis, Chicago, St. Paul, Minneapolis, and numerous communities in the intervening territory.

Upon the completion of these new lines, and when connections have been made with some of the older systems, nation-wide distribution of natural gas will be well within the bounds of possibility, and the quantity of potential energy that can be transmitted by such pipe-line systems may only be expressed in figures so large as to remind one of astronomical computations.

Such extension of natural gas distribution, supplementing our great electrical distributing systems at points where it is most needed, will lead to the establishment of many new social relationships. The dependency of numerous communities for fuel upon a single producing region will focus attention upon the conditions of production and distribution in that region. Communities served by natural gas will thus become interested in the efficient production and utilization of this fuel, and such stimulation of interest in the elimination of waste may eventually have nation-wide effects.

A realization of these facts, and the appreciation of the increasing public interest in natural gas, led your Association to express itself definitely on the subject of conservation. A resolution adopted at the Natural Gas Convention at New Orleans in May of this year recommended that natural-gas conservation be made the subject of intensive survey, and suggested that the United States Bureau of Mines be requested to assist in the study. Pursuant to this resolution, a series of conferences was held between representatives of the two organizations, and the Bureau undertook to review the literature dealing with elimination of waste in production, distribution, and utilization of natural gas, in order that your committee might have information enabling it to pre-

* Read before General Session, A. G. A. Convention, Atlantic City, N. J., Oct. 14, 1930.

sent a plan for further study to you at this October meeting.

By its Organic Act, and through subsequent legislation, the Bureau of Mines has been designated by the Congress to conduct scientific and technologic investigations with a view to conserving mineral resources through the prevention of waste, and to inquire into the economic conditions affecting the mineral industries. You should bear in mind the fact that the Bureau of Mines has no mandatory powers. It has no duty of enforcement. Our only purpose is to be helpful. In us you see an organization created and conducted with the sole aim of assisting the public and the mineral industries of this country in solving such technical and economic problems as may confront them. It is a governmental organization equipped to study problems of mineral-resource-conservation from a point of view which insures consideration of the inter-relationships of the fuel-producing and fuel-consuming industries. The Bureau of Mines neither establishes nor enforces any rules or regulations. It is thus an organization available to assist such an association as your own. We are pleased that you have recognized the value and need of more rigid and efficient conservation of natural resources. If you wish it, we will assist you in discovering and making available the facts regarding waste of gas, and in furthering the conservation of this important national resource.

It is easier to indicate waste than to eliminate it. You know there is waste in the production and the consumption of natural gas, and that there may be *avoidable* waste in its production, distribution and usage. The extent and character of present waste should be ascertained, and some comparisons should then be made with previous conditions. It is well-known that your industry has not failed to consider this problem in the past, and it is a matter of common knowledge that the producers and distributors of natural gas have already made much progress in solving their individual problems. The present need, and I understand this is the opinion of your committee, is to find out what can be done by the industry as a whole, in securing the maximum of usefulness from the natural gas produced in the United States.

The production and utilization of natural gas is so closely associated with the economic well-being of other major mineral industries, that the problem of natural-gas conservation cannot well be dealt with solely within the limits of this single industry. Before considering natural gas as a fuel, it must be thought of as a physical agent responsible to an important degree for moving crude petroleum to the surface. In this it performs a valuable service. Between 60 and 70 per cent of the natural gas actually utilized is produced in conjunction with the output of crude petroleum, and the need for oil is thus an important factor in determining the quantity of gas brought to the surface. One of the main factors in determining the production-rate of natural gas is therefore under the control of the oil industry, which is associated with, but somewhat apart from, the natural-gas industry. The waste which occurs between the production of natural gas, and its utilization, results in part from this fact that one industry largely determines the rate and the amount of production, while another industry has the job of seeing to it that the produced gas is properly utilized.

Because of the natural gasoline contained within it, there may be a demand for natural gas, entirely apart from its use as a propulsive agent in the production of crude petroleum, and aside from its fuel-utility. Natural-gasoline plants in various oil fields have assisted conservation by the collection of gas from scattered wells, and by making considerable volumes of residual gas available at central points. The carbon-black industry is interested in natural gas, and each one of us is personally interested in greater mileage from our automobile tires resulting from the use of carbon-black in tire manufacture. Fuel-consumers are bound to be interested in this natural energy source, both as to the supply and in regard to future uses. The wide development of small power-units within the reach of gas-distributing systems will add to our millions of internal-combustion engines. It goes without saying that the producers of other industrial and domestic fuels, whether they be solid, liquid, or gaseous, should not be disregarded in any consideration of the conservation or utilization of natural gas.

Although we may be struck with the extent of recent accomplishment, we should still consider that the natural gas industry is in its youth; your Association has expressed the desire that its future may benefit from all that may be learned from the past. An industry built upon sound investigation and interpretation of fact, should surely prosper.

During the past few years, our Bureau has worked with your Association in the solution of several problems, among which were the measurement of natural gas by large-volume meters; determination of leakage from high-pressure natural gas transmission lines; flow of gas through pipe lines; and gauging gas-well capacities. We have always found yours to be an organization desirous of taking full advantage of scientific data. Because of these pleasant and profitable contacts, I welcome this opportunity of coming to your annual convention, and of again suggesting that the United States Bureau of Mines will always be glad to work with the American Gas Association. This is the message I am here to deliver.

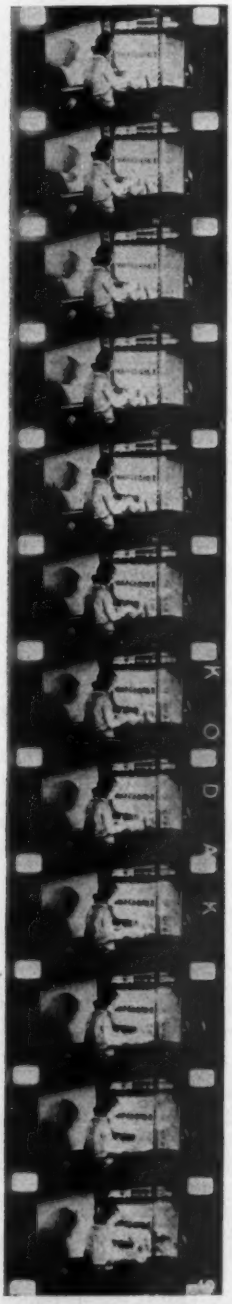
Christmas Advertising Novelty

Samples of a new game, "Gas-Easy," an adaptation of the parlor game, "Parchesi," which is returning to vogue, have been mailed to members of the American Gas Association. This unique game, built around the idea of encouraging more general use of gas for all household-heating purposes, is suitable as a premium for special sales, holiday gifts to customers, mailings to radio or keyed-advertisement requests.

Order or requests for additional information should be addressed to Keith Clevenger, director of publicity and advertising, American Gas Association, 420 Lexington Avenue, New York, N. Y.

Movies Show Use of Gas In Rochester Plant

By J. B. NEALEY
American Gas Association



Feeding gas-fired washing and drying machine

AUGMENTING written and oral specifications of gas-fired and other intricate operations, the motion picture is now being used in industry to portray these details graphically. It has been found that a motion picture will convey the method of doing a job quicker and more completely than a typewritten or verbal instruction. It can, therefore, be used to advantage to supplement the engineering specifications which cover blue prints of tools and materials, feed, speeds and similar data.

One of the pioneers in the use of motion pictures in this field, as well as manufacturers of the equipment used is the Eastman Kodak Company, Rochester, New York. Recently this company has been extending its plant facilities in foreign countries for the manufacture of Kodaks, other cameras, film, etc. In tooling these plants for production, special written specifications and instructions were prepared for each operation.

However, for international use, it was found that such special instructions and specifications were of limited value. Difficulties occurred through the lack of exact equivalents in translation and especially with technical shop terminology, and it was found advisable to make motion pictures of each machine while in operation. This was done, one long film being used for a number of machines, and suitable captions being interspersed to identify the several different operations, with the written specifications already mentioned. This film projected in the foreign plants gave the foremen and operators an immediate and a comprehensive grasp, not only of the equipment and general method of manufacture, but also of the essential details, and proved an invaluable aid.

In general, the plan used in these pictures was to show first a title which identified the operation and "keyed it" into the written specification followed by a "close-up" of the material or part before and after the operation in question. Following this a title was used to give briefly the material and equipment data. A long shot of the operation cycle was then given to show the arrangement and layout, followed by a close-up of the principle cycle to show the details.

The details of manufacture of the 16 mm. reels for the Ciné-Kodak will serve to show how this idea is carried out, and it will require little imagination to grasp the great value of visual instruction through motion pictures in contrast with the difficulty of getting a quick and comprehensive grasp of all these details as covered by the following descriptions: The side discs or flanges are made from aluminum blanks.

The first operation is to trim to size and perforate the round or square hole in the center. This is performed on a Bliss 21 punch press, the seated operator filling a tray on the front of the press from the original packing case and feeding from the tray.

Air blows the trimmed and perforated blank through a chute into a tote box at the rear of the press while the scrap is blown into a box at the left of the press. The presses in this division are all equipped with non-repeat mechanisms and guards which swing across in front of the dies when the press is tripped to push operators' hands away should they be a little slow at any time. The non-repeating device consists of a safety clutch which will not allow the press to repeat no matter how long the treadle is held down.

Operation No. 2. Stamp and pierce flange in Bliss 19, the blanks being in tote boxes on high lift trucks to left of press while the finished blanks are blown through chute into tote boxes at the rear.

Operation No. 3. Burr flanges in Bliss 19.

Operation No. 4. Emboss flanges in Bliss 19.

Operation No. 5. Blank hub in Bliss 19 inclinable. The material is the same as for the flanges with gray finish except that it comes in flat sheets 1-11/16" x 74", 28 sheets making 1,000 pieces. Operator feeds press from original packing cases, and disposes of scrap to floor on the left while the blanked pieces drop through the press into trays on the floor.

Operation No. 6. First form hub in Bliss 19 the formed pieces being blown into trays in the rear through a chute.

Operation No. 7. Second form hub in Bliss 21.

Operation No. 8. Washing consists of putting the parts through a combination washer and dryer of sheet steel about 30 feet

Pictures Instruct Mechanics In Manufacture of Eastman Equipment

long and 3 feet wide. It is divided into three parts, washing, rinsing and drying, the drying compartment being heated with gas burners and the whole equipped with a traveling chain conveyor which protrudes from either end to form loading and unloading tables. Another chain type conveyor runs parallel and close to the main conveyor in the washing compartment and the parts are held between the two from being knocked about by the sprays.

A solution of caustic soda, 2½ lbs. to 50 gallons of water at 160° F., is pumped through nozzles to form the sprays. Clean water at 150° F. is used for rinsing. Jets of air from perforated pipes blow off excess water and six gas burners keep the drying section at 450° F. For the tops and bottoms of the reels a solution of sodium cyanide is used as a rinse.

Operation No. 9. Bench assembles one flange to hub. This is performed manually at a bench by a girl operator.

Operation No. 10. Spray inside hub and flange with special Ciné black paint.

Operation No. 11. Spray inside round hole flanges. In this operation a spray hood outfit equipped for two girls is provided which includes gun type sprayers, trays, masks, etc. The air pressure for the spray is 75-80 lbs. and the 5 gallon tank is under a pressure of 25-30 lbs. The hoods are provided with gauges showing pressures from tank and spray lines. Operator secures hub and flange from tray, positions mask, sprays and disposes to tray on portable bench at side of hood.

The parts are baked after being sprayed and the whole set-up of spray booths and bake ovens is in a single room built specially for these operations (12 and 13). The 5 spray booths are placed along two walls and the 5 ovens along the others. All paint laden air from the sprays is drawn through excelsior lined partitions in the hoods by motor fan and exhausted outside the building. The excelsior absorbs the paint. Fresh air is sucked in from the outside by another fan and distributed throughout the room by a duct with eight openings.

There are four periodic ovens and one continuous type oven, all of sheet metal construction and heated with gas fuel. The continuous oven which is used for parts that can be dipped instead of sprayed is about 15 feet long, 10 feet high and 4 feet wide and is equipped with two parallel chains with rods suspended between at short intervals. This conveyor rises from the bottom to the top on the outside of the oven before it enters, this portion being exposed for convenience in loading and unloading. Inside the oven the conveyor descends and rises seven times on a series of rollers, returning to the loading end in a separate compartment at the bottom. It is operated by a ½ horsepower motor through a speed reduction gear train.

Heat is supplied by two atmospheric gas pipe burners located close to the bottom and extending almost across the oven. A temperature of 400° F. is automatically maintained with a temperature controller wired to a motor operated, two-position valve in the gas supply line. There is also a recording pyrometer of the disc type. The baking interval is two hours and has a capacity for 6,000 pieces in 8 hours.

Safety devices of all kinds are used including two foamite bottles just in front of and above the oven which are equipped with fusible links. In case the oven or room temperature rises above the limit the links let go and the foamite is sprayed over the booths and into the oven. At the same time all the fan motors and air circulation are stopped. Furthermore if the motors of the fans exhausting the products of combustion from the oven should fail the gas supply is automatically turned off by a solenoid valve. Pilot lights are supplied to keep the burners going when the gas supply is on and this gas supply cannot be turned on until the pilots have been lighted.

Operation No. 14. The final assembly of the reel is accomplished on a Bliss 19 with two dies. The operator secures a hub and square hole flange and positions on die, places jig around hub, puts round hole flange on jig, trips press for assembly, moves reel with jig left onto die No. 2 and rivets. Disposes to tray on high lift truck at right of press. Inspection for running out of true consists in putting reel on spindle with balance wheel, and twirling.

Operation No. 15. The assembled reels are again sprayed and baked after which they are inspected and gauged, the bottoms and covers put on, and a film put in and threaded through slot for final inspection.

Another product, reel ends for film reels in the ordinary roll film Kodak, are formed from metal strips in 8 operations, 8 punch

(Continued on page 564)

Feeding and disposal of gas-fired japanning oven

Changing the Sex of the Gas Industry

By FRANCES PRATT
Associate Editor of Comfort at Home

THE day has passed when "man wants but little here below." We want everything,—particularly we women. We can't pick up a magazine or walk past a shop window without having a half-formed desire added to the mental turmoil of "wants" clamoring to be fulfilled. So that buying becomes a matter of choosing among the many wants in accordance with the family budget. And selling becomes a matter of creating a great enough want to rise above all competing merchandise desires.

Hence in selling gas appliances to women the gas industry must be prepared to compete not only with electrical merchandise but with clothes, automobiles, home furnishings, cosmetics, summer vacations,—in short everything the mind of woman might desire.

This is a difficult task. The gas range displayed in the store window, even with its modern design and color, has little appeal compared to the evening of beauty that is the promise of the green chiffon evening dress across the way. Yet beneath its nuts and bolts the range carries a more lasting promise of beauty than does the dress. This intangible service of the gas range must be made reality in the mind of the potential woman customer or the range must always fall in preference to the obvious beauty of the evening dress.

If the gas industry would build its home-load it must so dress its service in the ribbons of comfort, convenience, and beauty that women will see not only the range or the prosaic water heater but those far-more-to-be-desired intangibles that the range and water heater will bring to her.

The story of gas is a masculine story. The mechanical or elemental mysteries of its creation or source, pipe lines, pumping stations, the molding of metals for its appliances, even the meter that records gas flow into the home and the strange figures appearing on the monthly bill are things that must remain always outside the intimate knowledge of women. The control of gas is an industry built by the vision and energy of men. Yet its present potential market is among women. Somewhere between the origin and ultimate consumption of gas its story must become feminine.

We cannot take women mentally into the mechanical intricacies of gas. Women are not interested in things mechanical. Witness the established fact that the average woman will carry an electric fan downtown for service, pay 50 cents, and carry it back again rather than involve herself in the mechanics of inserting a few drops of oil in a hole obviously for oil. Thus the industry is faced with the necessity of absorbing into itself the woman's viewpoint, phrasing its public story in the language of women, and telling that story through a feminine medium.

On the surface it would seem difficult to thus change the sex of an industry. But the very variety of intangible services gas has to offer women forms the plot of a sincere, convincing gas story for every type of woman. It remains only to know the women to whom we would tell the stories and the language each would understand.

The women who form our potential gas market may be divided into five classes,—the economy-minded woman, the younger married woman.

Five classes of women who comprise a potential market for increasing the domestic load

the older woman, the mother of several, and the social-minded woman. This classification is not based on any definite lines of social, mental, or financial caste. It is based on the various mental outlooks of women that will determine the angle of interest from which the gas story can best be told to each class.

First,—The economy-minded woman. She is too often overlooked in the fancy flights of modern advertising. She has been born of thrifty parents—Dutch, New English, Middle Western, perhaps Swedish—and trained in the traditional ways of homemaking. Her family includes at least four children. Her home is spotless and her meals large and substantial. Clothes hold little lure for her matronly figure and the four walls of her home are quite inclusive of her interests. She is in no sense the type of woman the philosophers call "modern" in alternating tones of praise and blame. Yet she is found in great numbers quietly living in the substantial sections of every city in our country.

With her, economy is a habit, not a necessity. She is economical with her health as well as with her purse strings. She has money to spend, but she spends it where she sees ultimate economy.

To make this little-heralded class of women more real to your mind we will take an actual experience. Born of Dutch parents and raised in New York City, married to a man of substantial income, mother of five children, living in the fashionable part of a large city is our economy-minded woman. It so happened that when she moved to this particular city she bought a home equipped with an automatic hot-water heater. The first month her gas bill ran slightly over the average she had established in her mind for gas bills. Her heritage of thrift rebelled. She marched down her basement stairs and turned off the convenient appliance to which she attributed the extra dollar in her bill. It took an entire month of talking to convince her that that extra dollar "saved" her time, strength, and energy. But she now uses her "instant hot water" proudly and counts the cost economy.

To women in this class the story of gas must be told in the language of ultimate economy of convenience. Once sold on this phase of gas service they are valuable customers, for their lives are so ordered that their use of gas is great.

Second,—The younger married woman. She has married from school or from the business world. She knows little of the art of homemaking, but she is eager to learn the modern way. She will go to the printed page to learn of homemaking as she has gone to the printed page in school or to equip herself for the business world.

She realizes the value of convenience. She wants leisure time to continue the interests of her unmarried days. She is interested in budgets and can be taught that the purchase of gas appliances is an investment and not a luxury. In fact, she is a willing and grateful prospect for the gas company who will trouble to seek her out and teach her. To her, the story of gas must be told in terms of modernity, leisure, and convenience and must include the semi-scientific "reasons why" that her trained mind will ask.

Third,—the older woman. Her family is grown and she now has a bit more money to spend than during the years of their growing. Following her long habit of saving she will be inclined to buy conservative stock with her surplus rather than invest it in a "new fangled appliance."

We can teach her nothing about homemaking. She would resent any such teaching approach. She is convinced that she knows from long experience more of the magic art of transforming leftovers than any home economist in the country.

But she does want time to play with her grandchildren. And it bothers her that her not-so-strong husband must make frequent trips down the cellar stairs to stoke the coal furnace. To her the story of gas must be told in the language of leisure for herself and comfort and ease for her husband.

Fourth,—the mother of several. She hasn't a great deal of money to spend and each purchase must be weighed carefully. She loves beauty yet often wonders if it can be found in the kitchen. We can show her the inexpensive way to that beauty and win her gratitude. But an analysis of her year's expenditures would show that each purchase was finally decided on a basis of "what would be best for the children." A gas appliance that would seem luxurious to her limited pocketbook if presented in terms of leisure and convenience for herself becomes a necessity when presented in terms of the health of her children. To her the story of gas must be told always in the language of what it will mean to those beloved children.

Fifth,—the social-minded woman. She is perpetually trying to keep up with the Jones'. She spends her money on a shiny automobile, living room furniture, copies of French dress models and ignores her antiquated kitchen, basement and bathroom. Everyone could name a dozen women of this type. She needs no explaining.

But to her, the story of gas must be told in social language. She must be made to realize that instant hot water is a social demand, a modern kitchen that friends may enter informally is a social asset, and that a conveniently equipped home enables her to appear more frequently and better groomed at the desired bridge parties.

Thus we have the feminine story of gas. It is not one story, but five separate plots with the possibilities of infinite variations on each plot. These stories properly told should make every woman they reach gas minded. Not that these women would be conscious of being gas minded for gas would have been indelibly linked in their minds to comfort, convenience, leisure, economy, health, depending on the type of woman. But each would be looking to gas for that desirable service that the gas industry has to sell women.

Only when gas is thus transformed in the language of women into its intangible services can it stand up in the minds of women and compete with the green chiffon dress in desirability.

This story of gas from the woman's viewpoint may be told through many mediums and must be told through many mediums.

Magazines have long been a feminine medium. For generations we have turned to them to learn of fashions in clothes. More recently, since homemaking has been elevated to an art, we turn to magazines to learn of home furnishings and home planning. A magazine is handy to pick up between tasks. If well done it is an ornament for the living room table. And we have a certain confidence in what is printed in its pages. This feminity of magazines may be elusive, but it exists. Ask your wife.

If the gas industry would enter the world of women completely, it must follow in the footsteps of fashions, and home furnishings,—and go there, at least in part, through the pages of a magazine.

Gas service, once sold for its intangible qualities, will never be too expensive to be desired and ultimately purchased.

Regulation in Our Time*

J. Paul Kuhn

By J. PAUL KUHN
Illinois Commerce Commission
Springfield, Ill.

THE subject of "Regulation In Our Time," which, has been assigned to me to discuss, is one of primary importance, not alone to those interested in the ownership, management and operation of public utility properties, but also to all who receive and pay for any service rendered through the operation of those properties.

No limitation can be placed upon the time which might well be used in discussing those many and varied matters which are properly classed under that subject and consequently I shall endeavor to comment briefly and only in a general way upon those phases of the subject which readily present themselves to my mind.

In my comments I wish to be understood as expressing my individual views, for the reason that the observations made by me do not in any way imply endorsement of those statements by the regulatory body of which I am a member, or of any organization of regulatory bodies in which I may actively participate.

The very growth of public utilities furnished the creative force for the regulation of industries whose activities vitally touched the daily life of our people. The states of Massachusetts, Wisconsin and New York were among the first to adopt laws assuming jurisdiction over the affairs of public utilities operating within those states and at the present time every state, except one has a commission of some character whose duties it is to stand between the utility companies and the public and see that each is justly and equitably dealt with by the other and each has rather completely asserted its right to control utility properties within its borders, in the matter of service to be supplied to the public and the rates to be charged for that service.

Most of those states have also prescribed accounting standards to be followed, have placed restrictions upon the issuance of securities and expressed supervision over the extension, installation and withdrawal of service.

Such regulation first brought a cry from big business while many not financially interested felt that state interference with private business was not conducive to the best interest of the country.

Later that feeling became less pronounced and the right of the state to regulate natural monopolies became more extensively recognized. Today utilities, which were at first unfriendly to regulation, find it to be the greatest stabilizing factor in their business and the public as a whole have come to realize that it prevents the charging of exorbitant rates or the making of excessive profits and at the same time guarantees a fair and reasonable return on investments and encourages extension of service and improvement of plant and equipment for the benefit of those served or desiring to be served. Thus, regulation is today properly recognized as securing to all, the advantages of a monopoly, and as protecting the public against its disadvantages.

The public have come to better understand that no utility can give good service unless it can show a stability and an earning power that will attract private capital, while the utilities have learned that they will not be permitted to inflate values, water stock or render an inferior brand of service.

Utilities generally are organized and vested with certain legislative rights and privileges to supply the public with a specific commodity or service. The nature of the commodity or character of service is such that duplication or competition would necessarily result in economic waste and consequently, more or less exclusive, commonly termed monopolistic rights and privileges are granted the utility, and it is upon this theory of a regulated monopoly that the laws of the several states are based. It is because of the grant of right that public utility regulation is warranted and because of these more or less exclusive rights the utility is charged with special duties and obligations in supplying a commodity or in rendering a service.

It is the duty of the utility, through its officers and employees, (1) to recognize the fact that it is created by the public, as its agent, with the protected privileges of furnishing to the public a certain commodity or supplying to the public a special service; (2) to supply the public within its territory with reasonably adequate service at a reasonable rate; (3) to exercise such a degree of care in the management and operation of its property, and the financing of the company, as to maintain its plant and equipment on a progressive and up-to-date plane, and to conduct its business on an economic basis consistent with modern progress and good service, in keeping with the advancement of the art and science; and (4) to maintain, improve and enlarge its plant and equipment in keeping with any reasonable demand for service which may be made upon it by the public.

In the main, the public utilities have come to so understand the fundamental theory of regulation, that the industry in general has so adjusted itself as to conform with the exercise of regulatory power by the states, and it is not uncommon to observe, in the conduct of the management of the utility, opposition to legislation proposing to tear down the structure of regulation by states and open the way to return to municipal regulation and control, or to pave the way for centralization of power in the federal government.

At the same time the public have come to the understanding that a utility must be permitted to charge for its service or its commodity a rate which will provide a sufficient revenue to pay its fixed charges, its proper cost of operation and a rea-

* Delivered before General Session, A. G. A. Convention, Atlantic City, N. J., Oct. 16, 1930.

sonable return upon a fair value of its plant, used and useful in the conduct of its business.

As a general proposition, the public recognizes that it is proper, in a rate hearing, to give honest consideration to the question of whether the utility company, at its existing scale of rates and with its existing costs, can obtain sufficient revenue to promptly meet its obligations and thereby maintain its credit, and as a consequence thereof maintain its service in prime condition and readily secure new capital for service extensions.

With this understanding on the part of all, we find that regulation, as it has existed, has resulted in great benefits to the public and to the utilities, and it is generally recognized that the principle of regulation is sound, though of course, being human, a regulatory body is not unlike other human enterprises and error will sometimes be found.

This is yet a comparatively new field of endeavor and, as we gain more experience from actual, practical application of the administration of regulatory control to changing conditions, it will naturally follow that its results will be improved.

One of the difficulties encountered by a regulatory body is that an honest human error, such as none of us is free from, is much discussed by all, while the valuable and helpful service rendered receives very little, if any, comment.

In this respect members of a regulatory body experience the same results from human nature as do the operators of the utility.

The utility service may be inadequate or totally suspended for but one period of 10 minutes within one week. The utility, if it serves normal consumers, will receive many complaints concerning that break in service and it will be much discussed among the consumers, while it may be that no commendable discussion will be engaged in concerning the adequate service rendered during the entire remainder of the week.

We are all more or less given to that same psychological reaction in all matters, and it naturally follows that the better the service—whether it be by a utility or by any individual in his usual vocation—the error or letting down of service, by comparison, becomes more pronounced.

In some instances much may be said by those served concerning periods of inadequate service, and no report be made either to the utility or the regulatory body, and a situation or condition which could be easily remedied goes uncorrected and becomes like the weather in that everyone talks about it and no one looks after it.

Each utility property of any size or importance is provided with a capable staff of trained engineers, accountants, lawyers and rate experts—specialists in the various phases of utility management and regulation—who pass upon each of its problems and the advisability of each of its policies, constantly studying its needs so that the best operating results and public relations may be obtained.

Regulation has provided, through the various divisions of the respective state commissions, a similar, well qualified staff of technically trained men, who render most valuable service to individuals and municipalities far in excess of what the finances of those interested parties would permit them to otherwise avail themselves of or enjoy.

With these safeguards, the regulated monopoly reduces the cost of doing business and results in the more effective conduct of that business. If the proper economic principles of operation are applied, the principle of regulated monopolies eliminates duplication of capital and of effort and results in a reduction of overhead expenses, in production, in selling and in advertising, and such reduction in cost maintenance and operation is reflected in a reduction in the cost of service to the consumer.

The regulatory bodies of today are called upon to be ever mindful, however, of the tendency of some utilities to extend service into virgin territory for the primary purpose of preempting it and thereby holding it as against another utility engaged in a similar business and in whose territory, in the ordinary progress of things, it would naturally belong.

An extension of any kind is usually popular with the public, and an extension, from which can be derived a sufficient revenue to justify the expenditure, will under normal conditions result in lower rates to all consumers, but—except where the territory promises to show rapid advancement in the near future—the regulatory body is charged with guarding against burdening the patronage which is compensatory with the cost of rendering service to those whose business is not compensatory. The necessity of weighing the many elements and factors, which are properly to be given legal, economic and engineering consideration, in the disposition of cases before a public utility commission, is the real basis for public utility regulatory laws.

If legislation could be adopted in such a way as to define its subject and object—with a precision that left nothing to administrative discussion and common sense—no kind of public regulation would be necessary.

In the operation of public utility properties the trouble comes, not from the fundamental rules as laid down, but from the practice of the utility in abusing the application of those rules.

It therefore becomes very difficult and borders on the impossible to lay down hard and fast rules, concerning operation, accounting and financing, to be adhered to under all circumstances and conditions, even though if in all instances there is an honest and sincere effort made to adhere to them.

But a conscientious effort on the part of the operators of utilities to adhere to the intent of the fundamental rules, as laid down, proves of material value in expediting justice and the business of the regulatory body, and ultimately to the healthy advancement of the business of the utility.

It therefore clearly follows that in the successful operation of a public utility it is important that its owners and operators recognize and grasp an opportunity, but it is of equal importance that they willingly forego an unfair advantage, which is clearly intended to be guarded against by the law.

The business of a utility must necessarily be based upon sound and well established and recognized business principles, having in mind at all times those things pertaining to service, commodity furnished, courteous treatment—which will deeply impress themselves upon a consumer—and its obligation to the public which gave it its existence and which in turn is served by it.

It is therefore important that the memory of character of service, quality of goods and courteous dealings remains long after the price is forgotten and by the application of that basis for existence and progress the business will prosper by a natural process.

Much could be said concerning the practice engaged in by lawyers and engineers who appear before the regulatory bodies representing the parties of interest.

The theory of utility regulation is a comparatively new field. A quarter of a century is a comparatively short time within which to develop new provisions, and a new standard of rules of evidence—and a new standard of evidentiary value—for that new field. Because of the inability to standardize evidence and rules of evidence in public utility regulation cases, erroneous records, due to lack of skilled legal and practical insight into the real issues of the case, sometimes result in many facts and conditions, which would have a tendency to throw light upon the real subject matter, not being presented and, on the contrary, many facts and conditions which have no probative value are offered.

This is not criticism, but is the observation of a condition which follows as a result where a case is presented by one who has had little opportunity, in a new field of practice to familiarize himself with just what elements of information are of essential importance and value.

As a result of this situation, which is unavoidable, the person or persons to whom the evidence is submitted finds a great deal of chaff in the hopper of justice, and the tribunal before which the case is pending is required to search through it in an effort to find a kernel of wheat, and sometimes the chaff becomes so confusing that the kernel of wheat is obscured or overlooked.

In presenting a case to a regulatory body today, it is a well accepted fact that matters not directly covered by the law must be given much consideration, and that the application of principles is not a cut and dried legal problem.

The utility operators of the country and the lawyers representing them should, in the preparation of cases to be presented for the consideration of the respective bodies charged with the application of the laws concerning regulation in the respective states, bear in mind that the cases present many facts which cannot be solved by judge-made or legislative-made laws.

Some of the outstanding institutions of higher education are advocating that the lawyer should be trained in other fields of endeavor. Those schools are already participating with their medical, economics and political science staffs in an effort to break down the artificial barriers between the various fields of learning. It is to some degree recognized that "social policy" is formed largely by legislators and judges, although neither of these agencies utilize the valuable knowledge of the economist, the historian, the psychologist, the philosopher or the engineer in determining this policy.

In my opinion, more time should be spent in the law schools in ascertaining how the law is actually working, and what inconsistencies may exist between local social standards and actual experience.

With reference to the engineer, he might well be reminded that even though he moves large obstacles with ease the fact remains that public opinion is nevertheless ponderable and can therefore be moved only slowly and deliberately.

When it comes to the field of utility regulation, where the lawyer, the economist and the engineer meet on common ground, the progress toward clarity should be rapid.

The engineer dares not apply nature's laws without complete consideration of their consequences, both social and economic. The legislator and the jurist may well disregard part of what the Romans did and contemplate present-day civil law in the light of present incompatibilities with present social, physical and economic law.

The lawyer, the engineer, the economist and the psychologist, by meeting on a common ground, can, and are, very materially assisting in building up a basic need of interest between utilities and the public people and in bringing about an understanding that what is unjust or harmful to either, is in the long run unjust and harmful to the other. Utility regulation has grown up over several years—law by law, order by order, court decision by court decision—and cannot be thrown down over night, even with the best motives, but it is gradually being transposed in its application with the result that it is each year better serving its intended purpose.

Colonel Donovan, counsel to the New York State Commission on revision of the Public Service Commission laws, has said: "The true philosophy of regulation laws is a harmonious relationship, between utilities and state." This can only come from an established basis of mutual confidence, and harmonious relations, which are the foundation for good regulation.

The question is what is the proper harmonious relationship and how should a basis of mutual confidence be established and what are the definite standards of social justice which must be accepted.

I believe utilities, as a business embraced with a public interest, owe an obligation to the people somewhat heavier than ordinary business, but that nevertheless they are private business with their capital devoted to a public purpose. Therefore, they need to endeavor to live up to the proper standards of social justice which we are now engaged in trying to establish.

Those men interested in the operation of public utility properties, if they be devoted to the industry and to the lofty principle of rendering the greatest possible amount of service at the lowest possible cost to the consumer, should in the performance of that patriotic duty find as much pleasure in looking forward

as we feel in looking back. Constant contact with men enthusiastically interested in the industry in which they are interested has established in my mind that a large number are possessed with a patriotic duty and responsibility in the rendering of public utility service. Occasionally, we experience the disappointment of finding an individual who is interested only selfishly in the service which he renders to his patrons and whose entire patriotism is wrapped up in a firecracker shot off on the Fourth of July.

I wish, however, that the people of this land could understand how much true and loyal patriotism, how much interested devotion to the highest interests of the country, is found among just such men as compose this organization.

Both from the standpoint of the utility, and from the standpoint of the public, the regulatory bodies are called upon to bear in mind that ordinarily very little regard is given to the individual who goes down on a prominent street corner and drops a plugged nickel in a peanut machine and then complains because he does not receive five cents worth of peanuts. And from the standpoint of a public utility it should thoroughly understand the customs of the trade, have a full knowledge of the arts and sciences involved, and possess reasonable ability to weigh all facts of every kind, nature and description, and to dissect and analyze the same—irrespective of whether those facts may be offered and presented by representatives of the utility, representative of the regulatory body, or by the public who are not expected ordinarily to be as well informed—and having fully considered all of these matters, work out a plan whereby the consumer may receive the greatest possible service, consistent with the rates charged and consistent with what the traffic will bear.

I have said that it is important for better operation and regulation to come as near as possible to having a proper and ideal blending of the legal and the engineering rules to be applied. The successful and well regulated public utility, to one occupying the position of a member of a regulatory body, very frequently takes on the aspect of a three-legged stool, leg number one representing the individuals who have capital invested in the utility property; leg number two representing the operators, including engineers engaged in the rendering of service; and leg number three representing the public, or such part of the public, as are users of the service offered.

It is rather a homely example, but my observation has been that if one will set before him a three-legged stool and concentrate all of his attention upon one of the three legs, it will appear to him that the other two legs are engaged in throwing all of the weight possible over onto the leg upon which he is concentrating. If he will then look at leg number two or leg number three, as the case may be, and concentrate entirely upon that one, it will again look as though the other two legs were forcing the weight of the entire structure over onto that one. And it not infrequently happens that the individuals represented in this homely example seem to so concentrate all of their attention upon the leg which represents that part of the structure which they are, that they lost sight of the importance of the other two legs, while it is the task of the commission or regulatory body to give full thought, consideration and weight to each of the legs supporting the structure, with the full knowledge that one or two of the legs supporting the structure could not possible exist, nor would the structure stand, without the cooperation and support of the third.

It is not my intention to touch upon that vast and all-important field commonly denominated "rate-making," and which gives to all of us such grave concern, except to say that the courts have held that a reasonable rate is one that makes the efficient enterprise moderately profitable. Consequently, the criterion in rate regulation is becoming a regulation of profits. Virtually every rate expert admits privately that absolute costs are difficult of exact regulation under shifting conditions of many descriptions. In fact, such factors as are commonly suggested are subordinated to the superior consideration of value of service to the user. The user, likewise, is inclined to make his utility expenditures upon the basis of what he believes the service to be worth to him. Whether his spare dollar goes for a gas appliance, for a range, for some other kind of household equipment, or for a new set of tires for his car, is determined largely on a subconscious weighing of values by the consumer. The net profit of the utility rendering public service to him hardly disturbs the thought of the man who is about to spend his spare money.

At this point I wish to insert a brief statement with reference to the logical unit to apply utility regulation.

Up to this point what I have said has had reference to state regulation, without comment upon its relationship with other regulation. Upon this subject I shall endeavor to be brief.

By reason of the fact that public utilities are engaged in the rendering of public service in large cities, as well as in the small cities and rural communities, there is required a co-ordination into a regulation that would be consistent and not so burdensome on the operating companies as to impair their development.

Regulation has become the logical responsibility of the state governments, but federal regulation of utility properties does not logically follow out of the state regulation, as state regulation did out of municipal regulation. State regulation became necessary because utility operations went outside of the geographical limits of municipal authority into areas in which no regulation existed. There are no such areas outside the limits of a state.

If one crosses the boundary line of one state he finds himself inside another state, and except for the District of Columbia and the territorial possessions, there are no areas in the United States that are not under local authority.

If state regulation of utilities functions properly, certainly it should always be better than absentee treatment by remote federal regulation. The intelligent administration of state control has been a contributing factor in the increase of public utility service in Illinois and I believe that same statement will hold true in all other states.

As the operation of small companies, which were originated many years ago, expanded with the development of the art, those companies began to serve a larger part of the pub-

lic and the operation of those properties definitely involved the public's interest, and it was correct and proper that municipal government should regulate these operations. But it was not long before utility properties overflowed the limits of cities and towns and brought their service to customers outside of these limits. In many instances the service was carried to smaller unincorporated communities which had neither the precedent for regulation nor the machinery for its functioning.

It is often alleged that regulation of utilities by state governments has broken down, or failed to keep pace with, changing conditions in the utility field. I do not believe state regulation has broken down or failed. What it has accomplished is frequently not understood by its critics and still less by the general public. This may be easily explained by reason of the fact that it is impossible to visualize just what the present condition would be if no state regulation existed, and therefore the public cannot use the all important element of comparison, in arriving at a conclusion. Regulation has been valuable to the public—there has been a general lowering of rates by utilities over a period of years and I think this may largely be credited or attributed to the conditions set up by regulation.

From a study of a recent analysis of data from regulatory bodies of 21 states, one has the right to conclude that in almost every case the decisions or orders of state utility regulatory bodies satisfy all parties concerned. The study includes all orders and decisions since the institution of the respective regulatory bodies. The total number of orders and decisions aggregate 142,704. In 1,389 cases—less than one per cent of the total—were appeals taken to the state courts and in 108 cases—less than one-tenth of one per cent of the total—were the decisions and orders taken to the federal courts. Of the total of 1,497 court cases, only 318 were rate cases, and only 177 were valuation cases.

Nevertheless, regulation, valuable as it has unquestionably been, both to the utilities and to the public, will be valuable in the future only as it actively and comprehensively reflects conditions which exist. I believe public utility operators recognize this fact and I believe they ought to put this recognition of fact into effect by supporting all wise and well directed efforts to bring laws into conformity with present conditions.

I further believe that the public utility industries might properly support even stronger regulatory commissions, better staffed and better equipped financially to do the job committed to them. There can result from wise, able expert regulation by state commissions, made up of men who understand their subject, nothing but benefit for both the public and the utilities.

A regulatory body, be it state or federal, performs its functions by conducting inquiries and investigations concerning all matters which have a proper bearing upon the subject matter involved. In the main, utility problems are largely local in their character and to properly regulate them requires an intimate knowledge of local conditions, and the solution of the problems depends very largely on the closeness with which the regulatory bodies can approach them. Under many of the state laws, and most of the practices of the state commissions, advance notice to all interested private parties and to the communities, municipalities and other political subdivisions affected, is necessary before a hearing is held, a finding made, or an order entered.

As a result, considerable publicity is always given before the hearing commences and local interest is aroused, and almost invariably local help is obtained in producing the facts and circumstances surrounding the matter being investigated.

Reasonably accurate knowledge of local conditions is usually obtained, and such information is indispensable to an intelligent ruling on the issues in question, all of which would exist to a very meager degree, if the investigation were being conducted by an arm of the federal government, unfamiliar with the locality affected.

Again, a federal organization, which is sufficiently manned to properly conduct all investigations now being carried on by the state bodies, would be so cumbersome and so unwieldy that intimate understanding of the problems would scarcely ever be obtained. Individuals, peculiarly possessing knowledge which would be especially helpful in the solution of those problems, could scarcely ever be heard and, as a result, conclusions arrived at would be less satisfactory to all and much delay would be occasioned in an effort to secure all of the facts.

For example, the Federal Transportation Act was passed in 1920 and that year the Interstate Commerce Commission was called upon to proceed to conduct studies, inquiries and investigations concerning the establishment of certain rules providing for depreciation charges to be allowed on telephone properties. Studies of that subject have furnished the information that approximately 96 per cent of the entire number of telephone calls were intrastate, and approximately 4 per cent were interstate. Ten years have now elapsed and, although the Interstate Commerce Commission in these investigations and studies, has been largely assisted by several of the states—those states furnishing at their own expense men to gather and supply the information sought—no rules or orders of the Interstate Commerce Commission concerning this matter have yet been forthcoming.

The natural growing tendency of centralization of regulatory power in the federal government is a subject of such seriousness and importance that volumes could be written upon it. However, the federal government has assumed jurisdiction over many questions which the states believe to be entirely local of character and within the proper supervision and regulation of the local regulatory bodies, as a result of which a great encroachment upon the powers of the state bodies has occurred.

If we were to follow this subject through, it could bring us to ultimate government ownership as the only logical conclusion.

President Hoover, while serving as the Secretary of Commerce, had the opportunity to make, and did make an intensive study of the effect of state regulation of utilities. In an address before the National Electric Light Association of 1920, the President said; "Nothing will produce worse service than to attempt to transfer local problems to absentee solu-

tion at Washington. If our democracy will stand at all, it will stand upon the local responsibility. Nothing could be a more hideous extension of centralization in the federal government than to thus undermine the state utility commissions and state responsibility."

Industries such as those represented here, whose annual requirements for additional capital and whose volume of business are both measured in billions of dollars, and which for all practical purposes are compelled to constantly expand, cannot fail to be concerned with the exercise of governmental control over the marketing of their stock and bonds, which is in a great measure stabilized by the regulatory monopolistic character given to the utility.

It can well be said, and substantiated by facts, that regulation of utilities has proven to be a real value to the public, and regulatory bodies are a continuing legislature in the respective states, with special jurisdiction.

If the federal constitution is to stand for anything and is to be the guiding light in our future activities then the agencies of state government should be charged with the responsibility of solving state questions and the agencies of the national government should be charged primarily with the solution of questions which are national in scope.

The growth and power of a great public utility are, ordinarily, beyond the understanding of one who has not made a special study of them, and a lack of understanding often leads to distrust. The gas industry, however, as a whole, has enjoyed the confidence of its patrons and you have won that confidence through service and customer-ownership and for that reason are well entrenched in the good wishes of your patrons. It is important to continue the spirit of good-will which now exists, which can be largely brought about by continued good service and constant improvement in both service and economics of operation so far, of course, as such economics are consistent with adequate service.

I hope that my belief is well founded, that the utility companies generally will continue to show the same intense initiative and performance in public service which has characterized them in the past.

You have assumed the responsibility of supplying the American public with the best possible service at the lowest cost consistent with good operation and good credit standing of the industry.

And I believe that I am well founded in the further thought that the American people will support and sustain public utility industries in fulfilling this duty so long as actual performance and service continue to measure up to this responsibility.

Family Serves Gas Company for 107 Years

LAST month rounded out an unbroken family connection with one company for a period of 107 years, extending from the time the company was organized to the present, and including three generations of the family.

This record was started in 1823, when Thomas Marsh joined the newly organized New York Gas Light Company. While that company was later merged with the Consolidated Gas Company of New York, the name of Marsh has continued to appear on the company payroll from that day to this.

The gas company was the only employer Thomas Marsh ever had in this country, since he was hired shortly after his arrival from England as a clerk. He remained with the company for 52 years, until his death in 1875, when he was superintendent of shop.

The four sons of Thomas Marsh also established long records of service in the employ of the gas company. Charles, who succeeded his father as shop superintendent, worked for the company 42 years; William, in charge of the meter department, for 40 years; James H., bookkeeper, for 38 years; and Alfred, bookkeeper, for 37 years.

Alfred C. Marsh, the son of James H., is the present generation's representative of the family. He joined the Consolidated Gas Company of New York in 1897, as a bookkeeper, keeping the unbroken record of the family intact. At the present time he is connected with the company's legal department.

The combined record of service for the Marsh family totals 242 years. It is the only family record that completely covers the entire life span of the organization.

While Alfred C. Marsh does not remember his grandfather, because the latter died the year that he was born, he recalls his father speaking of the early history of gas service in New York. His father said that the grandfather frequently referred to the first years of the company, when mains were laid up Broadway, and when gas-lighted theatres created flurries of excitement. Grandfather Thomas Marsh often spoke of the fact that gas was turned on in New York in 1825, the same year that the Erie Canal was completed.

The famous solid bronze "Dome of a Thousand Lights," that was a public attraction at Old Chickering Hall, at the northwest corner of 18th Street and 5th Avenue, was installed by William Marsh and serviced and maintained by James H. Marsh.

While performing this service work at Chickering Hall, James came in contact with many of the celebrities of the day, and one of his most prized possessions was an autograph album that contained the signatures of President Grant, Patti, and others of that era. James H., also liked to have his son accompany him on these trips to the hall, and as a result, Alfred C. Marsh has to this day vivid recollections of the beautiful gas-lighted auditorium and the important personages that went in and out of the doors.

Texas Gas Production Takes Lead

FOR the first time in several years Oklahoma dropped into second place among natural gas producing states, according to a recent report of the United States Bureau of Mines, Department of Commerce, Washington, D. C. Texas led with a production of 464,928,000,000 cu.ft., and Oklahoma stood second with production of 357,893,000,000 cu.ft.

Eighteen Employees Get McCarter Meds in

WHILE co-workers, members of their families and officials of the company watched, 113 employees of The Brooklyn Union Gas Co., Brooklyn, N. Y., were awarded, on October 29, 1930, service emblems including 18 McCarter Medals or Certificates presented by the American Gas Association at a dinner tendered them by the company.

The emblems were awarded by one who will himself receive a fifty-year service resolution next year—Vice-President Arthur F. Staniford.

Six men, who have completed fifty years' service with the company were presented with engraved resolutions. These men, who also receive a year's salary as a gift from the company, are John F. Burrill, Robert J. Campbell, Walter S. Hicks, John N. Lamb, Patrick McKeon and John F. Smith.

Two other veteran employees honored were Frank J. McIntyre, who completed sixty-five years of association with the company, and Michael J. Shay who has served for 55 years.

Of the other employees receiving service awards six completed forty-five years and six forty years. Thirteen men have been associated with the company thirty-five years and twenty-four with it for thirty years. The names of fifty-eight men were added to the company's Service Honor Roll in view of their completion of twenty-five years of service.

The award winners and guests were addressed by Clifford E. Paige, vice-president of the company and president of the American Gas Association. John T. White, assistant secretary, delivered introductory remarks before the official presentations.

In addition to the service awards eighteen employees who during the past year rendered conspicuous service in saving the lives of persons overcome by gas were given Thomas N. McCarter Medals and Certificates by Henry E. McGowan, secretary of the company, on behalf of the American Gas Association.

Michael J. Duffy was presented The Brooklyn Union Gas Co. Meritorious Emblem for heroism in rescuing two other workmen by Herbert Wellington, treasurer. Mr. Wellington gave the company's special awards to Miss Mildred Rocks for establishing a record in number of teletype communications and William L. Riehl for contributing a valuable suggestion.

The Williamsburgh Branch team, which won the championship in The Brooklyn Union Gas Club Base-

...s in Brooklyn

ball League, was awarded the president's trophy by Harold F. Coleman, president of the club. Mr. Coleman presented the president's trophy for bowling to the general office team. These trophies were the gifts of James H. Jourdan, president of the company.

The service employees follow:

Sixty-five years' service—Frank J. McIntyre.

Fifty-five years' service—Michael J. Shay.

Fifty years' service—John F. Burrill, Robert J. Campbell, Walter S. Hicks, John N. Lamb, Patrick McKeon and John J. Smith.

Forty-five years' service—Thomas F. Byrnes, James Cauley, Patrick T. Leonard, Patrick Lowder, Daniel Shaughnessy, and Alfred H. Williams.

Forty years' service—Francisco Carnevale, John J. Heyen, Patrick Leonard, Richard S. Maddren, Adolph Moore and Richard J. Welch.

Thirty-five years' service—George S. Arthur, Daniel P. Coakley, Francisco Colanna, William F. Hall, John D. Jennings, Robert H. MacDonald, Stephen McDermott, Thomas P. Payne, George B. Reoch, Lawrence Shine and George J. Smith.

Thirty years' service—Bernard B. Bird, Edward L. Byrne, Frank M. Corduan, William L. Eginton, Patrick Feeley, John Giudice, Arthur C. Hansen, John Hoffman, Richard Kearns, Andrea Mangino, Nicola Marino, Andrew Maurer, Matthew V. Maxwell, Frank Miller, Joseph Miller, Charles H. Mugge, Luke McDonough, Charles E. McGowan, Thomas O'Hare, Nicholas Petrullo, Louis C. Riley, Otto Roelich, Mariano Savino and John W. Sharon.

Twenty-five years' service—Samuel Alman, Hugo F. Alsterberg, Christian Anderson, Harry B. Arlt, John E. Beckwith, George F. Belford, Francis J. Blake, Vincenzo J. Brigandi, Edward Bunger, William J. Carberry, Walter R. Crawford, Albert H. Crook, James Derwin, John A. Devine, Edward Edwards, Charles Eissing, Alexander S. Ewing, Edmund W. Feltham, Charles F. Gallagher, Nicola Giudice, William J. Goodwin, Henry J. Grogran, John Hamilton, Thomas E. Hopkins, Frederick A. Hoskins, Frank H. Kochendorfer, William L. Krombs, Giuseppe Marino, Robert J. Matthews, George D. Milligan, Edward F. McCrossen, James A. McDermott, James McDonough, Frank McNamara, Mortimer Moss, Edward J. Murphy, Daniel J. Nolan, William S. Nolan, George Packer, Michael Powell, Bernard Rahill, Edward M. Raleigh, Louis G. Reuss, Joseph M. Reynolds, George S. Smith, Frederick G. Stark, John C. Stenger, John E. Stewart, James J. Teer, Joseph A. Terriere, Patrick S. Thompson, Joseph Trochio, Michele Viglione, Michael Vucolo, Frederick Wegener, Emanuel J. Weinmann, Louis M. Weiss, George O. Young.

McCarter Medals were awarded to the following employees:

Edward P. Donker, Michael Franzese, William J. Gallavan, George J. Hertling, Frederick H. Koster, Emanuel J. Kubat, Albert H. McNeill, Arthur D. Olsen, Michael J. O'Malley, Frederick W. Seckler, John J. Vellia, Adam Will.

McCarter Certificates were awarded as follows:

Lawrence Dreher, John G. Kotchie, William L. Krombs, Henry E. Jones, Gisbert Mezerole, Thomas Schecker.

Natural Gas Line Mileage Expanding Steadily

WHILE the total mileage of our natural gas pipe system is steadily increasing, its control, as the result of mergers, is passing into fewer hands, Dr. G. R. Hopkins of the United States Bureau of Mines, Washington, D. C., says in a report to the American Chemical Society. The combined gas interests of the Standard Oil Company of New Jersey, according to Dr. Hopkins, probably represent the largest holding under one management.

The total mileage of the country's natural gas pipe line system, he points out, is not so high as it is commonly supposed, amounting to about 40,000 miles for the trunk lines and perhaps an equal amount for gathering lines. This mileage is spread over 25 states.

The greatest concentration of natural gas pipe lines occurs in Ohio, Pennsylvania, and West Virginia, that is, in the general vicinity of Pittsburgh. The majority of the longest lines originate in the Southwest. Texas leads in total natural gas pipe line mileage with over 6,000 miles of main lines.

Development of long-range transportation of natural gas for conversion into various chemicals at industrial centers is foreseen by Dr. Hopkins. This, he declares, would reduce transportation costs to the manufacturer of chemicals, and would greatly benefit the natural gas distributor by creating an additional market, and by allowing operations to continue the year around, with a resultant increase in the ratio of demand to the peak load.

Natural gas is usually found associated with or close to oil deposits, and it is thought that both have been formed under much the same conditions. However, large natural gas fields have been found unassociated with oil. For example, many unsuccessful attempts to locate oil in paying quantities have been made in the celebrated Monroe, La., gas field.

Natural gas is produced in commercial quantities in 24 states—Arkansas, California, Colorado, Illinois, Indiana, Kansas, Kentucky, Louisiana, Michigan, Mississippi, Missouri, Montana, New Mexico, New York, North Dakota, Ohio, Oklahoma, Pennsylvania, South Dakota, Tennessee, Texas, Utah, W. Virginia, and Wyoming.

The total production during 1928, the latest year for which official figures are available, amounted to 1,568,139,000,000 cu.ft., of which the three leading producing states, Oklahoma, Texas, and California, produced 320,861,000,000; 301,990,000,000 and 246,215,000,000 cu.ft. respectively, Dr. Hopkins states. These figures cover only marketed output, that is, they do not include gas which has been allowed to dissipate into the air.

Natural gas is produced in a great number of fields, many of which have several producing sands or horizons. The most important gas fields in the United States are the Panhandle field, located in Hutchinon, Carson, Gray, Wheeler, Moore, and Potter counties, Texas, and the Monroe field in Morehouse, Union and Ouachita parishes, Louisiana.

The Panhandle is said to contain slightly over one million acres of gas territory in which wells of over ten million cu.ft. per day may be drilled. Up to a short time ago only slightly over one hundred wells had been drilled, but these had a total daily open flow of over three billion cu.ft. The amount of gas recoverable in the Panhandle has been computed at between 4,000 and 8,000 billion cu.ft., which at the present rate of withdrawals (estimated at 250 million cu.ft. per day) should last for forty-five to ninety years.

The total amount of recoverable gas in the Monroe field has been estimated at about 2,200 billion cu.ft., that of the nearby Richland field at 1,500 billion cu.ft. At the present rate of withdrawals from both fields—about 600 million cu.ft. per day—the total of 3,700 billion cu.ft. should last for about seventeen years it is estimated.

Corrosion is said to be a serious problem in the natural gas industry. The loss due to corrosion of pipe lines, both for oil and gas, is computed at more than $100,000,000 annually.

The number of domestic consumers of natural gas in 1928 amounted to 4,366,400, an increase of ten per cent over 1927. This figure actually represents the number of meters in service; hence there are probably several times as many people using natural gas. The number of cities and towns in Texas alone served with natural gas amounted to nearly 500 at the end of 1929 as compared with about 82 at the close of 1926.

Natural gas, Dr. Hopkins says, performs the function of raising much of our crude petroleum to the surface, but its real utilization begins when it passes into man's possession and is used as a source of natural gasoline, as a fuel, as the raw material in the production of carbon black, helium, solid carbon dioxide, and various chemicals. Of these, its use as a fuel is the most important.

During 1928, 1,473,434,000,000 cu.ft. of natural gas or the equivalent of 94 per cent of the total output, were treated for the recovery of natural gasoline. The remaining 6 per cent was mainly "dry" gas which was too low in gasoline content to justify extraction and which was delivered directly from the wells into the distributing systems.

The total production of natural gasoline, formerly called natural gas gasoline, in 1928 amounted to 1,814,034,000 gallons, valued at $138,944,000. Nearly all of the natural gasoline production is used at petroleum refineries for blending purposes and eventually comprises about 10 per cent of the total gasoline consumed.

"Because of its cleanliness, convenience in use, and heating qualities, natural gas will supplant coal and wood in cooking and water heating regardless of price," Dr. Hopkins explains. "It will replace coal, sometimes oil, in househeating if it can be supplied at a price, based on heat

units, that is not far above that prevailing for those two fuels.

"It will replace coal in certain industries where absolute heat control is essential, but it will not supplant coal, particularly powdered coal, in most industries unless the price is on a 'dump load' basis.

"This explains why the cost of gas to domestic consumers may be one dollar per thousand cu.ft. as against twenty cents or less for industrial consumption. Inasmuch as the domestic business constitutes but 20 per cent of our total natural gas consumption, it is usually necessary that any contemplated major pipe line project be able to supply gas for industrial users at a cost below that of competitive fuels.

"This is why natural gas engineers devote the major portion of their attention to prospective industrial consumers, why nearly all major lines terminate in a large industrial city, and also why the majority of the major enterprises have at least one large industrial user signed to a long-term contract before construction is started.

"At one time natural gas was considered to be inexhaustible and was so cheap that fires once started were never turned off. However, it soon became evident that the supply was not unlimited and rate structures made their appearance. These became increasingly complex.

"The average price paid by domestic consumers has increased slowly but steadily for a number of years, a reflection of the increased cost of production and transportation. The average price paid by domestic consumers in 1928 was 62 cents per thousand cu.ft.; the range was between 33 cents, the average for West Virginia, to $1.50 for Michigan.

"The low figure of 33 cents does not represent the lowest rates charged, for in some cases the fight for franchises between rival companies has resulted in prices as low as 10 cents per thousand cu.ft. The average price paid by industrial consumers in 1928 was 23.2 cents as compared with 22 cents the previous year and 21.3 cents ten years ago.

"The rapid growth in natural gas distribution facilities in recent years and the comparative absence of failures in the industry have had a tendency to instill a feeling of infallibility in the public mind and has inspired an unusual number of proposed lines.

"Some of the pipe line projects now contemplated appear economically unsound because reserves have been overestimated, superiority of natural gas over coal and oil has been overrated, assumption has been made that all domestic business could be secured, domestic consumption data based on northern cities have been applied to the South and West, 'unaccounted for' gas has been underestimated.

"As to domestic business, it may be cited that a considerable number of people rent their homes and do not have the say as to the piping of gas into them, also that the cost of a gas stove and the reluctance to make a change often outweigh any potential advantage that might be secured by conversion to natural gas."

An interesting development in natural gas transmission, Dr. Hopkins adds, has been the conversion of crude oil lines into gas lines. This practice was recently brought to public attention through the acquisition of the Columbia Gas and Electric Corporation of two oil lines, one leading from Olean to a point nearer New York City, the other from Pennsylvania-West Virginia state line to Millway near Philadelphia.

The Columbia Corporation, according to Dr. Hopkins, is reported to be putting these lines into operating condition, which, if true, will place natural gas on the Atlantic seaboard for the first time.

"At the present time the natural gas industry is one of those riding the crest of popular interest and favor," Dr. Hopkins continues. "The chief cause of this sudden rise in popular esteem lies, not in its steady growth over a period of more than one hundred years, but in the recent completion of a number of natural gas lines of large diameter and several hundred miles in length. These have appealed to the imagination and have given rise to many conjectures as to the end of this development.

"Five years ago the completion of a line more than 100 miles in length was looked upon as an outstanding achievement, but recently several lines nearly 500 miles long have been completed, and one of 900 miles, from the Panhandle to Chicago, is being seriously proposed.

"This sudden development in the technic of gas transmission has been brought about largely through the discovery of new sources of supply and new uses at a time when the necessary capital and engineering ability were available to build these lines."

Artificial Lungs for Breathing Failure

(Continued from page 535)

Prior to owning their own respirators one was being loaned to Philadelphia by the Consolidated Gas Company of New York, which company also has donated ten to Bellevue Hospital of New York. There is one in Chicago, one in San Francisco and rush-order requests have been received from San Francisco for seven additional machines; from Los Angeles for one; San Mateo, one; Detroit, one; Minneapolis, one, with every indication that their use will increase very rapidly.

Attention was drawn to the respirator in Philadelphia a few weeks ago when a young man was admitted to the Presbyterian Hospital there suffering from a pronounced case of infantile paralysis. He was paralyzed from the neck to ankles and physicians admitted that his only chance of surviving lay in prolonged mechanical respiratory treatment. At that time Philadelphia had no machine—the nearest one being in New York, and health authorities blocked a proposed plan of transporting the patient to New York on account of the infectious character of the disease. A truck was sent to New York bringing the respirator loaned by the Consolidated Gas Company to the Philadelphia hospital, and the patient traveled steadily upward on the road to recovery.

With the success of the respirator having been demonstrated beyond question, it is evident that cities of importance and their outlying territories cannot afford to be without freest access to its facilities. It has become a necessary contribution to preparedness in the treatment of certain acute forms of accident and disease, and although of recent invention the respirator has been approved by leading medical authorities and some of the country's foremost engineers.

Home Service in Canada—Its Business in Utilities*

Miss Read

By JESSIE M. READ
Home Service Director
Consumers Gas Co., Toronto, Canada

TO you, as Canadian Natural Gas men, is Home Service a myth or has it become a firm reality as it has to your associates in the American Gas Association? Home service at any rate is not a myth—it has taken a very definite place in the Gas Industry and is there to stay.

Home service operates with certain aims in view. These original aims were worth while. If they had not been, Home Service would now be actually the myth that many gas men believe it to be.

Home service operates first of all to develop public confidence and build up a better customer relationship. Following on this we have the aim, possibly not as subtle but very definite, to increase gas sales, to build up the domestic gas load.

1. By a more constant use of appliances.
2. By creating new uses for appliances.
3. By encouraging the purchase of appliances.
4. By education of the logical and natural uses of gas.

Lastly, home service strives to assist the homemaker in creating more perfect homes, healthier bodies, and happier minds through better home cooking and home making methods.

All of this is done by educational work carried on under the headings of:

Cooking, using gas ranges, and refrigerator.

Sanitation, using water heaters, incinerators.

Laundry, using washing machines, dryers, water heaters.

House heating using radiant fires, and house heating appliances.

The channels through which home service operates are many and are briefly:

Home calls.

Cooking classes and demonstrations in a company auditorium.

Lectures and demonstrations given to women's clubs and organizations.

Domestic science classes in public and high schools, University groups and any other organized society.

The answering of requests by telephone, mail or personal interview.

Editorial work in newspapers and magazines.

Experimental work on appliances sold by the company and on recipes, menus, etc., to be given out by the department.

Radio work also plays a great part.

The district in which a company is situated, the feeling of the consumers toward the company, and the expenditure to be allowed must all be a guide as to which channel is going to prove most successful for home service operations.

Home calls bring the gas company in direct contact with Mrs. Consumer in her home through a representative from your Home Service Department. This is about the oldest idea of home service. It has proved itself as the sensible and logical way of selling Mrs. Angry Consumer the idea that the gas company is ready to act for her and not against her. Those of you familiar with this type of work know how many times your Mr. Jones or Mr. Brown endeavored to appease Mrs. Angry Consumer and she just would not listen. (What does a man know about cooking anyway, was the thought in the back of her mind.) Great was your surprise when after home service had called and talked things over, you find Mrs. Angry Consumer deciding that the gas company is a nice place after all. Home service does for the gas company what a drop of oil does to the squeaking door latch.

Home calls bring even greater happiness to Mrs. Happy Consumer, because she feels that the gas company is looking on her as something more than a good gas bill. Mrs. Consumer is often more friendly in her own home and the result is that often she will tell home service her trouble in keeping the furnace going, how cold the back bedroom is and how she dislikes having to get up early to light the heater in the morning—what an "open sesame" for the salesman if he is told.

Home calls should be made on every appliance sold because is there an appliance in the home which Mrs. Consumer does not have to operate? If there is not time for calls on every appliance, then Mrs. Consumer should be called on after the purchase and installation of the new range and refrigerator. The new consumer unfamiliar with your gas and gas company, its services, etc., should always be contacted by home service as soon as possible.

Cooking classes and demonstrations in a company auditorium bring many Mrs. Consumers together right within the company's own four walls. Here she comes to be given tuition in the ancient art of cookery. "Cooking classes are on the wane" said one authority. Are they? May I give you one week's attendance at my own lectures in Toronto—1300 in one week—with classes every day on the same subject, which means there is no repetition.

On a survey taken of those registering in my classes from one year to the next we found that we had 66 per cent new homemakers, which meant new contacts. Cooking classes give you the good will you are after. Mrs. Consumer appreciates the fact that her gas company is trying to help her, trying to encourage her in making home-making a pleasure.

Cooking classes not only can contact you with Mrs. Consumer, but also with Miss Business Girl—our future and even harder to satisfy Mrs. Consumer. Cooking classes also contact you with little Miss Girl Guide or Canadian Girl in Training, who goes home and tells Mother what a nice place the gas company is.

At cooking classes home service has the opportunity of showing Mrs. Consumer how she can save little bits of gas here and there and in this way cut down on the high gas bill complaints. At the one and same time she is showing Mrs. Consumer how to cook one fruit cake for 3 or 4 hours at a regular temperature instead of buying it at the bake shop where incidentally 10 or 12 cakes have been baked on the same amount of gas, and our profit on those other 9 or 11 cakes has gone into Mr. Baker's pocket.

The home service auditorium should be placed where Mrs. Consumer passes through the salesroom, through the long line of attractive appliances into the auditorium where again she is confronted with the new range or refrigerator, and a desire for such a stove or refrigerator takes root—and, I ask you, have you ever been able to side track your wife once she had made up her mind that you are going to buy her something her heart is set on?

Closely associated with these lectures in the company auditorium are lectures given at the various women's clubs, etc., which I have already mentioned. The director of home service, should, where possible, belong to a number of clubs since in this way she can meet the type of women socially who would logically be buyers of the better priced appliances and the users of a goodly supply of gas

* Address delivered at the Twelfth Annual Convention of the Natural Gas and Petroleum Association of Canada, held in the General Brock Hotel, Niagara Falls, Ont., on October 24, 1930.

due to the amount of entertaining done by them.

When invited to address an organization she usually diplomatically requests that she is using company time, etc., it would be a kindness for them to introduce her as said company's representative. Usually I am allowed to choose my own subject and always pick one where I can work in the mention of one appliance or another. Then, since this time is being given gratis, the director or speaker may do a little side advertising for the department and, incidentally, the company. Mrs. Consumer, representing the buying public is again contacted by the gas company home service department.

As the department becomes better known telephone calls, mail and personal interviews grow. Mrs. Jones phones to know how long to roast a chicken—Mrs. Brown writes in for information on oven canning and Mrs. Smith comes in to see home service for suggestions for the bridge party she is giving next week. More contacts!

Magazines and newspapers begin to look on home service as a reliable source of information. Newspaper space you used to beg for is now being offered to home service directors to use for articles pertaining to the home.

Your home service director should know and approve every article on your sales floor so that she may have a working knowledge of them to pass on to Mrs. Consumer. What better way is there for her to know this than to have her test each appliance, write a report to the sales manager with her remarks and in this way give added confidence to the salesman on his appliance—His own home service department approved it! The department should sanction only recipes which they have tested themselves and in this way built up Mrs. Consumer's confidence in them.

Radio work has wonderful possibilities, especially when a company's properties are scattered. In this way at least once a week the whole group are linked together in one broadcast. More contacts!

The question arises, "Should home service be directed by the sales department?" Can you think of a department in the company where it could be of more use? Certainly it should not be glaringly obvious that there is a direct tie-up with sales since the confidence we are after is given more readily when there is no evidence of home service being operated for the purpose of increasing sales of gas or merchandise. Nevertheless home service should work hand in glove with the sales department giving the manager and staff every cooperation asked for. The home service department may, so to speak, act as a buffer between the consumer and the gas company. Every company salesman should know what his home service department is, how it functions, and what it can do to aid sales. The salesman should have complete confidence that his home service department is reliable.

Briefly, as the various countries send their ambassadors of good will into neighboring countries, so should you have a home service department in order to send out your ambassadors of good will to your consumers, and these ambassadors should be chosen with a great deal of forethought.

I have told you of home service and its possibilities, its success depends on the support you give it as a company and on the women you choose for this work. In one woman you must look for and expect to find practical training in addition to a home economics course, personality, tact, patience, attractive, neat appearance, and adaptability.

She must be trained well by you so that before she contacts your Mrs. Consumer she has become gas minded and also appliance minded.

May I give you a few figures to show you the advance of home service? Out of 321 questionnaires sent out by the American Gas Association Home Service Committee, 75 replies were sent in. A few facts from these are as follows:

Home service carried on in 507 various towns and districts.

There were 6,986 classes given in the form of cookery classes or schools with an attendance of 511,059.

Floor demonstrations were given with 114,645 contacted.

The number of complaint request calls made was 23,509.

The number of regular follow-up calls on new installations, etc., 79,637.

A short summary of this is that the total number of people reached during the past year, according to the questionnaire replies of 75 out of 321 home service departments, was 4,178,425.

In Canada we have a few home service departments in operation. One in Ottawa, directed by Miss Marcella P. Richardson; one in Calgary, Alta., under the directorship of Miss H. L. Aylsworth, with a branch of this in Edmonton, Alta., under the direction of Miss Kathleen Esch. A very active department in Vancouver under the direction of Miss Agnes Reid, and our department in Toronto which is the original home service department in Canada, now under my direction.

There are, as you can see, great possibilities for Home Service and the future of it I leave in your hands.

Recent Visitors to A. G. A.

THE American Gas Association recently has been glad to welcome and extend greetings of the American gas industry to the following distinguished visitors from other countries:

E. C. A. Bliault

Edgar C. A. Bliault, British director of the Ruud Manufacturing Company, Limited, introduced by J. C. Walker, secretary of the British Commercial Gas Association; Professor Hoepfner, manager of the Research Institute for Road Construction of East Prussia, and Hugo Laeger, director of the Information and Consulting Bureau for Tar and Macadamized Road Construction of Essen, introduced by Dr. Karl Lempelius, of the German Association of Gas and Water Engineers of Berlin; S. Mihori, H. Nakamura, T. Omori and M. Suwa of the Tokyo Gas Company, introduced by C. Mizukoshi, of the Imperial Gas Association, and J. Arnold Norcross, vice-president of the New Haven Gas Light Company, New Haven, Connecticut, A. G. A. representative at the World Engineering Conference recently held in Japan; Jean Bing, *Chef du Service Technique du Comité des Producteurs et Distillateurs de Goudron en France,* and Camille Serville, *Ingénieur en Chef du Service Commercial de la Societe du Gaz de Paris,* introduced by M. Mougin of the French Gas Association; Dr. Kurt Baum, of the Association for the Supervision of Power and Heat Economy of the Ruhr Collieries, Essen, introduced by Dr. A. C. Fieldner, of the Bureau of Mines, Washington, and Professor Bunte.

New Natural Gas System Formed

GAS distributing properties in Oklahoma and several other states are involved in the formation of a new natural gas system in the southwest known as the Consumers Natural Gas Company. This company has acquired control of the Pecos Valley Gas Company in New Mexico, the Gas Company of New Mexico, the Oklahoma General Gas Company and the Pioneer Gas Utilities Company. The Southern Union Gas Company, which has a substantial stock interest in the new company, will exercise management and supervision. The Pioneer Gas Utilities Company and the Oklahoma General Gas Company, which are included in the merger, operate in the vicinity of Oklahoma City, drawing their supply from the Oklahoma City gas field. The Pioneer Gas Utilities Company serves residential districts east and south of the incorporated limits of Oklahoma City and also the poultry colony known as Nicoma Park and the towns of Choctaw, Harrah and McLoud. The Oklahoma General Gas Company serves Nichols Hills, an incorporated district adjoining Oklahoma City on the north.

Convention Calendar

Gas Short Meter Course, Iowa State College,
Ames, Iowa
December 9 to 12.

1931

New England Gas Association,
Boston, Mass.
February 3, 4, and 5.

Missouri Association of Public Utilities,
Excelsior Springs, Mo.
April 16, 17 and 18.

Pennsylvania Gas Association,
Galen Hall,
Wernersville, Pa.
April 28 to 30.

Chamber of Commerce of United States,
Atlantic City, N. J.
April 28 to May 1.

A. G. A. Natural Gas Department,
Memphis, Tenn.
May.

Institution of Gas Engineers,
London, England.
June 2, 3 and 4.

Canadian Gas Association,
Montreal, Quebec.
June 4 and 5.

Southern Gas Association,
Chattanooga, Tenn.
June 9, 10 and 11.

National Electric Light Association,
Atlantic City, N. J.
June 8 to 12.

Pacific Coast Gas Association,
San Francisco, Calif.
September.

American Gas Association,
Atlantic City, N. J.
October 12 to 16.

Tenth Anniversary of Iowa Meter Course

TEN years ago the Iowa District Gas Association, now known as the Mid-West Gas Association, in cooperation with Iowa State College, started a short meter course, the first of its kind in the United States. The Mid-West Gas Association is justly proud of its accomplishment in making this course available which has in the ten years of its existence instructed more than 750 men in the gas industry in that part of the country. In celebration of the tenth anniversary, the program committee, headed by R. L. Klar, of Des Moines, has arranged a program more comprehensive than ever for the session to be held at Iowa State College, Ames, Iowa, December 9 to 12, 1930.

The meter shop, wherein practical instruction in meter repairing is given, will be, as usual, conducted for those who desire that kind of practice. In addition, the conference will be held during the four days and will consist of eight sessions at which thirteen papers will be read and discussed.

First, and most important among the topics up for discussion, are those in connection with natural gas and this portion of the program will touch not only on the characteristics of natural gas but will include methods of utilization. Next in importance will be several papers on meters and one paper of importance has to do with the testing of large meters. This subject is especially pertinent because of the growing number of large meters in service and the fact that many repair shops are not equipped for testing meters larger than thirty-eight.

Two general subjects will be papers on allied topics, such as pipe coatings and pipe corrosion. And, last but not least by any means, there will be a paper read on the subject of new development in domestic hot water heating and developments in domestic heating with gas.

This Short Meter Course offers instruction and information of interest and value to not only operators but managers as well which cannot be obtained in any other way. Further information can be secured by writing R. L. Klar, Des Moines Gas Company, Des Moines, Iowa.

Missouri Association

ASSISTANT Secretary Jesse Blythe, of the Missouri Association of Public Utilities, has announced that the 1931 convention will be held at Excelsior Springs, Mo., April 16, 17 and 18.

Arthur W. Thompson Dies at Pittsburgh

ARTHUR W. THOMPSON, former president of the Philadelphia Company of Pittsburgh and former president of the United Gas Improvement Company of Philadelphia, died at Pittsburgh, Pa., November 9. He was fifty-five years old.

Mr. Thompson was a director of the Missouri, Kansas & Texas Railroad, the P. C. C. & St. Louis, the Consolidated Gas Company and the Electric Power and Light.

Natural Gas Problems

(Continued from page 530)

clusions arrived at would be less satisfactory to all and much delay would be occasioned in an effort to secure all of the facts."

A few words by President Hoover —"Nothing will produce worse service than to attempt to transfer local problems to absentee solution at Washington. If our democracy will stand at all, it will stand upon the local responsibility. Nothing could could be a more hideous extension of centralization in the federal government than to thus undermine the state utility commissions and state responsibility."

To repeat, I should regret to see the camel's nose of Federal control appear under the tent of State authority in the natural gas industry. That nose is becoming too familiar.

To sum up, the only argument for Federal control would be that the States cannot effectively regulate the rates and service to consumers. I most respectfully submit the proposition that they can, do and will effectively regulate, and that the only danger is that their power to do so may be destroyed by Federal interference.

In conclusion, let me say that the natural gas companies, generally speaking, have a far-sighted and enlightened view of the situation. Here and there, as in every new and apparently profitable field of human endeavor, there are those who wish to over-extend natural gas production and transportation, and to bring about a situation involving large competitive investments, duplicative and therefore wasteful in character, involving heavy losses to the investors. But stabilizing influences within the industry itself are at work, and encourage the belief that the natural gas industry has the brains and the foresight to govern its expansion program so that State regulation will effectively protect the public interest. This is a gratifying and inspiring prospect.

Ad Men Hear Clevenger

KEITH CLEVENGER, director of publicity and advertising, American Gas Association, spoke before the annual convention of the Outdoor Advertising Association of America, Milwaukee, October 21-23.

Safety Work Recognized by Awards of Trophies

THE safety program of the Consolidated Gas Company of New York, New York, N. Y., and affiliated gas companies is expected to be further stimulated by the award of bronze plaques to all departments completing one year without a lost-time accident. Six departments of the company have achieved this record and received plaques, according to John Stilwell, vice-president in charge of industrial relations.

Outstanding records of the company were established by the Customers' Service shop at Elizabeth Street, with three years and four months without a lost-time accident, and the Ravenswood manufacturing plant, with three years and one month. Other departments completing a record of one year or more are the 66th Street Customers' Service shop, the Northern Union Gas Company shop, the East River Gas Company shop, and the New York and Queens Gas Company shop.

The Elizabeth Street shop has an average of 125 men; the Ravenswood plant, 101 men; the 66th Street shop, 173 men; the Northern Union shop, 122 men; the East River shop, 67 men; and the New York and Queens shop, 57 men.

The purpose of the plaque is to reward the outstanding safety records of the various departments, and at the same time to stimulate continued efforts for accident prevention on the part of every employee, Mr. Stilwell stated. Space is provided on each plaque for the addition of a suitably engraved plate for each additional year without an accident.

The inscription on the plaque states: "The prevention of accidents minimizes the sufferings of humanity, conserves the nation's manpower, and husbands the resources of industry."

In announcing the establishment of the plaque award, Mr. Stilwell spoke as follows on the safety program of the industry:

Consolidated Gas Company's Interdepartment Safety Trophy

"The public utilities were the first to take a concerted stand for safety. Today, with every industry engaged in this healthy competition for the improvement of working conditions, the utilities are more than ever the pioneers, constantly seeking new ways of educating men to avoid accidents and sparing no expense to remedy the remaining physical hazards of labor.

"By throwing ourselves into the safety movement, we recognize a responsibility which we have toward the public that looks to us for light, heat, and power."

Bryant Company Captures Safety Prize

The Bryant Heater & Mfg. Company, Cleveland, Ohio, recently was presented the first prize bronze plaque for the best no-accident record in the Heavy Machine Shop Division, Group B, in a contest conducted by the National Safety Council.

The award was presented on the occasion of the nineteenth annual Safety Congress, recently held in Pittsburgh.

The contest, promoted in the interest of greater employee safety in industrial plants, was based on the least number of lost hours due to accidents to employees.

A single accident during the six months the contest ran, prevented the Bryant Company from having a perfect slate—yet this resulted in a loss of only 8 of the more than 150,000 employee-hours.

Considerable distinction is attached to this extraordinary accomplishment, because of the national scope of the contest and the number of industrial plants taking part.

J. N. Schweikert, Director of Manufacturing, attributes the enviable record to a constant campaign of safety education among the factory employees in conjunction with the commendable efforts of the National Safety Council.

Safety Award Presented the Bryant Heater & Mfg. Co.

Company Markers Prove Value

COMPANY markers for natural gas pipe lines have been vindicated as valuable advertisements by an incident related by Cities Service Gas Company in Oklahoma.

A drilling company planned to buy gas from another source, as it was not known the Cities Service had a pipe line in the vicinity. In making location for a well, representatives of the driller noticed a Cities Service pipe line marker at the roadside, got in touch with the production department and a drilling sales contract was made.

Ten Thousand Attend West Virginia Gas Show

Glimpse of Corner at Fairmont Gas Show.

TEN thousand people attended the gas show, held last month at Fairmont, W. Va., according to Harry E. Leeper, director of the show, which was arranged for by the Monongahela West Penn Public Service Company. From the standpoint of attendance, it was one of the most successful exhibitions ever held in Fairmont, Mr. Leeper believed, while he expressed the opinion that the excellence of the show as a whole and the individual exhibits along with the uniqueness of the whole exhibition were responsibile for the large attendance.

A. G. A. Sponsors Exhibit at Power Show

HEATING, cooling and drying operations will demonstrate the versatility and adaptability of gas fuel at the exhibit the American Gas Association is sponsoring at the ninth National Exposition of Power and Mechanical Engineering, at Grand Central Palace, New York, N Y., December 1 to 6. The following gas companies in the Metropolitan area are cooperating with the Association in arranging the exhibit:

Consolidated Gas Company of New York, The Brooklyn Union Gas Company, The Brooklyn Borough Gas Company and New York and Richmond Gas Company.

The gas display will be in Booth No. 7, and will occupy nearly 1500 square feet of space. Decorations will be modern, the dominating feature being a huge representation of a gas flame. Many of the latest types of gas appliances will be on display, most of them in operation. There also will be a large display of nationally known products, which have been processed by gas. Representatives of the association and the cooperating gas companies will be in attendance at the booth at all times.

The following gas equipment will be on display:

Rotary carburizing furnace, manufactured by the American Gas Furnace Co.; The Kemp air-gas mixing machine, used in connection with the Kemp immersion system of heating low melting point metals and solutions (Manufactured by The C. M. Kemp Manufacturing Co.); The Selas Company's air-gas mixing machines in connection with internally heated soldering irons; Gas-fired boiler and boiler water feeding pump, manufactured by the Mears-Kane-Ofeldt Co.; The Ensign-Reynolds Co. gas compressor supplying gas for a group of special burners, and also for supplying gas to internally-heated solution tanks; the unit heater, a self-contained gas-fired air heater, manufactured by the General Gas Light Co.; a water cooler and an optical lens chiller, manufactured by Electrolux Refrigerator Sales, Inc.; a nozzle mixing blast burner with temperature control, made by the Partlow Corp.; the Carrier Weather Maker for supplying conditioned air for space heating and industrial processes (manufactured by the Carrier Lyle Corp.).

An application of large volume water heating by The Bryant Heater and Manufacturing Co. in connection with the Patterson-Kelley Co., indirectly heated hot water storage tank; Ideal boiler (manufactured by the American Gas Products Corp.); the Surface Combustion Co., gas-fired forge furnace, with temperature control supplied by the Wilson-Maeulen Co., Inc.; the gas-fired boiler with boiler feed water pump (manufactured by the Eclipse Fuel Engineering Co.).

The following committee of the American Gas Association is in charge:

C. W. Berghorn, American Gas Association; C. Y. McGown, Consolidated Gas Company; C. E. Muehlberg, Consolidated Gas Company; R. H. Staniford, Jr., The Brooklyn Union Gas Company; A. L. Palmer, The Brooklyn Union Gas Company; O. E. Barene, The Brooklyn Borough Gas Company, and J. A. Reynolds, New York and Richmond Gas Company.

R. M. Martin, of the Consolidated Gas Company, was in charge of the preparation of the exhibit.

R. A. Ziegler Leaves Lowell

ROY A. ZIEGLER, general manager of the Lowell (Mass.) Gas Light Co. for the past year, tendered his resignation to the directors of the American Commonwealths Power Co., effective Nov. 1. He will be succeeded at Lowell by Harry K. Wrench, of the New York office. Mr. Ziegler will go to Jacksonville, Fla., where he will enter private business.

Commercial Group Meets at Dallas

WITH more than 300 in attendance, the First Southwest Natural Gas Sales Conference, sponsored by the Commercial Section of the American Gas Association, in Dallas on November 13 and 14, proved an outstanding success.

Chester L. May, chairman of the Conference and general superintendent of the Community Natural Gas Company, Dallas, Texas, opened the first session. He introduced F. L. Chase, president, Lone Star Gas Company, Dallas, who outlined the executive's viewpoint toward sales departments. Other speakers at the morning session were H. C. Davidson, secretary of the Consolidated Gas Company of New York City, whose address, "Some Economic Aspects of Utility Merchandising," discussed merchandise accounting policies and their effect on company and dealer sales promotion activities. Mr. Davidson was followed by H. E. Meade, of the New Orleans Public Service, Inc., New Orleans, La., whose address urged the setting up of class rates for commercial gas business.

S. A. Lipscombe, of the Arkansas Natural Gas Corporation, Little Rock, Arkansas, presided at the first afternoon session. The initial paper, "Selling House Heating in the Southwest," was offered by C. K. Patton, Texas Cities Gas Company, Dallas, Texas. "Successful Methods of Securing Industrial Business" was the topic presented by J. B. Allison, Kansas Pipe Line and Gas Company, Salina, Kansas. "Salesmen's Compensation Plans for Small Companies," a subject of interest to many southwest companies, was discussed by Max Suddeth who read a paper by P. C. Tucker, Arkansas Power and Light Company, Pine Bluff, Arkansas; while E. L. Dunagan, Oklahoma Natural Gas Company, Tulsa, Oklahoma, submitted a paper by N. A. Newton, of the same company, discussing compensation plans for larger companies.

The second morning session was conducted under the chairmanship of Mr. Newton. The program opened with an interesting presentation by E. C. Whitcomb, Fort Worth Gas Company, Fort Worth, Texas, "Gas Industry Versus Electric Merchandising," followed by Miss Albertine Berry, San Antonio Public Service Company, San Antonio, Texas, who emphasized home service activities as a sales aid.

C. B. Wilson, Southern Cities Distributing Company, Shreveport, Louisiana, presented a helpful paper on "Domestic Sales Campaigns," and J. F. Orr, United Gas Corporation, Houston, Texas, concluded the session with an address on "Training Salesmen for Load Building."

S. A. Lipscombe, Arkansas Natural Gas Corporation, Little Rock, Arkansas, opened the final session with a paper on "Methods of Organizing for Effective Appliance Installation and Servicing." "Employee Cooperation and Sales Organization for a Group of Small Companies" was next covered by S. E. Kerr, Community Natural Gas Company, Dallas. The last conference topic was "Methods and Results of Dealer Cooperation," presented by E. N. Avegno, New Orleans Public Service, Inc., who described his company's cooperative plan regarding the sale of water heaters.

The conference was characterized by unusually active general discussions of all topics. Those present also went on record as favoring holding another Southwest Regional Sales Conference during the coming year.

Gas Company Aids Fire Prevention

A fire-prevention window of The Laclede Gas Light Company, of St. Louis, Mo., which attracted more than ordinary attention and brought to the company many letters of commendation. The display was worked out by Syl C. Reiser, display manager, in collaboration with Fire Chief Alt of St. Louis. A scroll listing the names of St. Louis firemen who made the supreme sacrifice in the line of duty was mounted in a huge silver frame. Underneath appeared an appropriate wreath, while gray and black drapes formed an appropriate background. There was no attempt to commercialize the window.

Publicity and Advertising Section

JAMES M. BENNETT, Chairman ALLYN B. TUNIS, Secretary DONALD M. MACKIE, Vice-Chairman

Gas Advertising's Job*

By EARLE WHITEHORNE

WHAT is advertising and what is it for? How often do we really stop to go back into that elementary aspect and ask ourselves and see whether we are qualifying under the rules?

There is only one possible reason for advertising, and that is the desire to sell something and the importance in the selling process of telling people about the value of this thing we want to sell, the value to them, the reasons why they should buy.

There is a limitation upon selling in that it costs too much money to send a salesman to everybody. What are you going to do when you can't send a salesman to everybody and you have thousands of people whom you want to sell? Well, the ideal thing would be to get everybody to come to you since you can't go to them. If you could just get everybody whom you want to sell, every householder in your city, to come into a great auditorium and give you the opportunity, you a trained man, the best salesman, we will say, on your force, the man with all the arguments, with all the logic, with all the point of view—if you could get them to come into a great auditorium and listen to you, that would be the ideal condition. Then you would have an audience.

Now, you picture that, gentlemen, and ask yourselves what you would talk about? What would you say? How would you act if you had ten, twenty, thirty or a hundred thousand people before you and could reach them through an amplifier and had to hold their attention?

You would do two or three things. First, you couldn't single out any one man and talk about the things you knew would interest him. You would know that you had a great mass of people and that they were all different. You would have to analyze your situation and fasten upon those common interests that would hold the interest and attention of the greatest number of people. And if you started to talk to them, you would know that you would have to talk about the thing that was of interest to them and not the particular thing that was of interest to you.

But, unfortunately, you cannot get those people to come into a great auditorium. So, therefore, you have to talk to them on paper. And it is a sad commentary on human nature that the same man who would stand before that audience, appreciating the responsibility and the obligation upon him, the tremendous opportunity and the necessity for his making the best of it, will sit down to address that audience on paper and completely lose the point of view. And the first thing you know, he is dominated not by the thing which he knows is the common interest of the people he is talking to, but he is dominated by those organization pressures and influences which are going to make it easy for him to get approval of an advertising program, of an advertisement, of a policy. And before you know it, he is writing advertisements to please his boss—one man. And the thirty thousand, or three hundred thousand people that are in the audience that he is to address, he has forgotten, and he comes before them with a message that he never in the world would dare to speak if he walked out on a platform to talk to them, man-to-man, face-to-face.

Now, here is a good illustration of it: I am in the publishing business. I would like to talk to you about the publishing business. I would like to tell you about the great job that journalism is doing in American industry. But if I did, what chance would I have to hold your attention? You just wouldn't be interested. You gentlemen are here to think about the problems of the gas business, and my only chance of interesting you, my only chance of making any contribution, whatever, to this program, is for me also to think in terms of the gas business and try to bring you some helpful thought.

I think the most important problem, the most important necessity, the most important lesson to be learned by men in the advertising end of the gas business today, is self-effacement in the thinking which goes into their advertising operation—the absolute necessity for them to submerge their own point of view, to eliminate the point of view of their boss, insofar as possible, and get down to the common interests of the people whom they have in their audience.

Now, what are those common interests? People are always interested in themselves. And the best proof of it is that the gas man is interested in the gas business, the publisher is interested in the publishing business. And just as soon as you forget that and begin to talk in your gas advertising about the gas business and not about the business of life in the home, and talk about the business of economics or operations or production in industry, the business of sales, merchandising, or what you will, in the store—you are lost; you are sunk.

There are three kinds of gas advertising, it seems to me. First is the good will and institutional advertising that comes closest to your hearts. The second is service advertising, which ought to be the most important thing that is expressed in your advertising, and has probably the smallest part. And third is the advertising of merchandising.

I would say that the institutional and good will advertising which comes closest to the interest and thought of the executive of the gas company is the worst done, and that the appliance advertising is the best job that you do.

I think it is interesting to consider why that is so. When the gas company went into the appliance business in the first place, they were adventuring in a new field of sales, because for many years there was no sales problem, as you know. And they started out in an amateurish way to advertise gas appliances, gas light, gas cooking. The department stores also took up the sale of gas appliances and began to advertise them. And right away, very fortunately, you were thrown into a direct commercial competition with somebody else trying to get the same sale, win the same customer, do the same business that you were out after. And the very force of economic competition sharpened the wits of the men who were in charge of that advertising and has developed the best advertising expression which comes out of the gas company today.

That was one reason.

The other reason why it was possible to do that was that by and large the executive of the gas company was far less interested in the appliance advertising than in the institutional and good will advertising, and he let it alone. And the man who had the responsibility for doing that advertising had a free hand, he got down on the basis of merchandising, he studied the way the Department Stores operated. Today, his advertising comes closer to Department Store advertising than any other kind of gas advertising. And it is a better job. It is a better merchandising operation.

From what I have seen—and I have looked over a good many ads, looking forward to this day—I would say, frankly, that I think the institutional and good will advertising of the gas companies is better done today than the typical good will and institutional advertising of the electric

* Abstract of address delivered before the Publicity and Advertising Section, American Gas Association, at Atlantic City, N. J., Oct. 14, 1930.

companies. I don't know why that is so, but that is the reflection that I get. And yet it is suffering from one of the things that is very much the matter with the institutional and good will advertising of the power interests, and that is an apparently inescapable tendency to talk about themselves.

It develops in rather an interesting way. You have got several things of interest; several things to talk about. But all the time, behind you and welling up around you, are traditions—the background of a point of view which is a professional point of view, a technical point of view, an engineering point of view, a gas man's point of view, that has very sadly interfered, I believe, in gas company advertising, with a simple understanding of the public interest in gas. And you have lacked the power, the courage, to forget yourselves, to get back in the home, to get back in the factory, to get back in the store and think in terms of those things which are the dominant daily interests.

I would like to make just a few illustrations.

In looking over a group of gas ads the other day, I picked out some rather interesting examples of the thing that I am talking about. These are not the worst—they were not picked out just because I wanted to be disagreeable. They were picked out of a lot of very splendid copy. There is some very fine advertising being done by the gas industry. I think that some of the best advertising is being done by the gas industry, especially that which comes out of the American Gas Association service, itself. It is exceptionally good, I believe. But these ads have been taken out, here and there, and are representative of a large volume of the advertising that is flowing out over the name of the gas company today.

I realize that you can take examples out of anything and criticize them. It is the easiest thing in the world to criticize something. You can criticize good ones and bad ones. It is easier and more fun to criticize the bad ones. Perhaps it does more good.

But, as I say, I want to make just a few illustrations.

I picked an advertisement out of a group of newspapers, signed by one of the big gas companies. It showed a picture of a whole row of gas holders going out through the country, and in great big letters the title was, "Towers of Progress."

Now, if there is any one thing in the world that the gas company ought to be ashamed of it is that atrocious looking piece of hardware, the gas holder, which is introduced in so many residence districts throughout this country. Some day I hope somebody will find a way to countersink them in the ground. People hate them. They destroy property values. People curse them as they go by them, if they have to live near them. And yet there was a gas company that spoke to the people about the gas holder as being a symbol of progress. Whose progress? It merely symbolized the fact that the gas company had more of those atrocities now than ever before. But go back into the home of John and Mary Smith and see what it stands for, and you will know what the answer is.

Now, it wasn't that mere single ad. But it was the state of mind. It was the mental attitude on the part of the man who wrote that ad, the man who approved that ad, the man who let that ad go by, absolutely oblivious to the public relations influence of this hideous atrocity.

Here is another newspaper ad, with a headline, "Here is a boiler a woman can tend." Well, now, who wants any woman to tend a boiler? What woman is going to give a glad cry in the morning when she gets up because she has to go downstairs and tend a boiler? And yet here was a message. Here was a man who was writing an ad, who forgot that he was really standing on a platform before perhaps three hundred thousand people, and was saying to the women of his town, "Here is a boiler that you can tend." And the reaction was absolutely bad. He ought to have realized it. But he didn't realize it.

Another one said, "We are pleased to announce a special heating rate." Who is pleased to talk about a rate? Who wants to hear about expense? Who is going to be excited because a new rate has been announced? If a story is told that makes them desire to use gas more freely than they feel they can today, and then they are informed that now they can do it because of the lower rate, then that is positive and it is helpful and it is hopeful—and it is gratefully received. But the idea of that approach is unfortunate.

Another one says, "Gas—the Better Fuel—assumes new beauty in the kitchen."

When was gas ever beautiful in the kitchen? Why try to "kid" the people in your city? You couldn't tell your wife that and have her become very much excited over it.

Why does a man do that kind of thing?

"Are you willing to pay what is right for gas?" says another.

Why insult the cockeyed world by asking them whether they are willing to pay what is right for anything? There is no man who wouldn't say, "Why, certainly, I want to pay what is right. I wouldn't take it unless I paid the right price." And yet that is the approach that was used.

Another one says, "A Home where gas is the Magic Queen of Service."

Throw on the tremelo stop and cut out the pipe organ and let 'er flicker! "The Magic Queen of Service" is gas!

Well, now, that's a lot of hooey. Nobody falls for that kind of stuff. And yet it is the expression of a dignified public utility. And it is misrepresentative, absolutely. The man who wrote it didn't stop to think.

Another one says, "Of course, you can struggle along without this convenience." Thereby he insults everybody he speaks to because he intimates that they are just struggling along in a Godforsaken existence and have none of the good things of life.

Another—a picture of a gang laying a pipe, and the headline is, "Humble heroes."

Well, who cares about that? They have a good job. A lot of people these days haven't any jobs. They are mechanics. They like their job and they get well paid. Humble heroes! Who is going to get excited about that? Who is going to buy because of it?

Another one says, "Domestic Refrigeration Belongs to the Gas Industry."

Well, who says it does? A lot of people say it belongs to ice. A lot of people say it belongs to the electric industry. It is purely superficial, voluntary information that is of no consequence, has no bearing on the case, won't make any friends, nobody will believe it. If they do believe it, they won't care.

Another one says, "Dependable Gas Service." Why not? If it wasn't dependable you couldn't sell it. If it wasn't dependable you shouldn't speak of it.

Another one: A great big picture of a gas burner, and then an infinite number of these advertisements that simply show a piece of hardware: "This gas burner makes your coal furnace an automatic."

Well, the only thing people are interested in the idea of automatic is a certain additional convenience and comfort in the ordinary habits of their home. It isn't the hardware that they are interested in. Nobody yearns for a gas burner. Nobody yearns for a coil of copper pipe. Nobody yearns for any kind of mechanical gadget that goes into their home. They buy them because they get a certain result.

Public sentiment, gentlemen, isn't built that way. A politician went down to the corner of a farming country one day and came across a farmer mending his fences. He drove up to him and said, "Bill, how's public sentiment down this way?"

The farmer replied, "Well, it seems to be getting along right pert. There were fourteen of them parked in my lane last night."

There you have it. Public sentiment. They are interested in each other. They are interested in themselves. They are not interested in you. They are not interested in the farmer who owns the lane. They are not interested in anyone but themselves. So are you and so am I.

I am just talking about a lot of elementary stuff. It is utter foolishness for any man to stand up before you gentlemen and talk about something that you know. But, unfortunately, the day's work is made up and wrecked often by the things that we know and have known so long that we disregard and neglect them.

A newspaper comes into your home at night. You are tired and don't want to be bothered, or else you are feeling pretty peppy and you want to be entertained and have a little fun. And your wife is either tired and doesn't want to be bothered or she feels like having a little fun—going out and doing something.

Well, now, when you put your ad in that paper, when you stand up before this

man and woman, multiplied by tens of thousands, what chance have you got? There is no entertainment in it. There is no human interest in it. There is no new information in it. There is a perfectly blind gesture on the part, apparently, of some fool who can't think of anything but himself. And if there is any bore in the world it is the man who stands up, or the woman who stands up and talks to you about themselves when that person is somebody you are not interested in. If our own friends come to us with a problem and begin to tell us about it, we are interested because of our sympathy and our desire to help them.

People don't seek entertainment in an advertisement unless it is made entertaining. People don't get information out of gas advertising unless it is informing. People don't bother to read them unless they are easy to read. People don't stop to look at them unless they are appealing and arrest the attention and create the desire. You know that.

Now, there are some very good examples of industries that have done a job of this sort. You know them. You have watched them. Take the National Cash Register Company. There is probably one of the most complicated, ingenious devices that has ever been created. It costs a lot of money. Tremendous precision and accuracy. A marvel. But have you ever seen the National Cash Register Company show a picture of their factory or tell about how many pieces there are in a cash register, or talk about what wonderful principles they have behind the cash register, or what a great public service they are performing?

No. They have come before the merchants of America and talked to them about the importance of knowing their cash condition every night, of keeping tabs on every clerk, of having accurate cost accounting. And by talking to them in terms of boots and shoes and butter and buckwheat, and everything else that merchants sell, they have sold the entire country on the idea of the cash register mechanism, and it has become standard equipment.

They have never talked about their cash register because nobody at first ever had one before. Nobody wanted one. Nobody would buy one. But once the economic value of the thing was established, then it had its appeal.

The same way with the typewriter, and the adding machine, and in the domestic field the phonograph and the radio. The radio manufacturers don't talk about the electron tube, they don't talk about their condensers. They talk about the music, the educational, the cultural, the entertainment aspects.

The clothes-washers; refrigerators; linoleum; kitchen cabinets—have all been sold in the same way.

I talked the other day to a man who lives out in Montana. He is a farmer out there. He is near an Indian reservation. On that reservation is an Indian family and the father is named Mike Twobelly. As you know, Indian children are given various fanciful names, such as Red Feather, White Cloud, Big Gun, etc.

This Indian, Mike Twobelly, had twin boys not long ago, and he named one of them Montgomery Ward Twobelly and the other Sears-Roebuck Twobelly. It seems that the Indians name their young ones after anything that arrests their attention at the time, and the mail order catalogue has become one of the most dominant influences in the life of those people out in the great West. The Indian buys everything from it that he doesn't get from the store.

The appeal of the mail order catalogue is that every man, woman or child can wade through it and find everything that their heart desires offered to them in a convenient way and cheaply, talking in their language, with nothing said about Montgomery Ward or their marvelous system of distribution, etc. They talk the language of the customer, in terms of the thing that the customer wants.

The easiest thing in the world is for any man or any industry to get all hopped up with their own self-importance. Why, the shoestring manufacturer could claim that shoestrings won the war. If there hadn't been any shoestrings the soldiers couldn't have kept their shoes on, they would have gotten sore feet, their morale would have broken down and the Germans would have won. It is just as logical as anything we can set up in the gas industry. But it isn't true.

The pickle manufacturer is just as full of ideals as the gas man, providing an old traditional food to millions of people, providing it in a new way—more convenience; more cleanliness; more sanitary; more healthful; more variety; delivery at your door. The pickle manufacturer is just as full of ideals, just as full of ambition and high principles as anyone in the gas industry. But the pickle manufacturer never talks about that. He talks pickles. And the gas man, when he talks to his public, is very apt to forget and talk about himself. It happens that people have always used pickles, that they enjoy using pickles, that pickles are an object which they pick up and put in their mouths and smack their lips over, and they like them.

They can't do that with gas. But out of the use of gas comes the service. And the service, gentlemen, is the thing to talk about—not the gas.

It seems to me that the gas industry has a very big opportunity, if they will forget their public service aspect, forget the size of their industry, get their focus down to the individual who is their typical customer, and begin to talk in terms of human interest in the home, in terms of human interest in the store, in terms of human interest in industry.

In looking over gas advertising, there is almost no appeal to industry. Gas is doing some of the most miraculous things in industry today that a man could conceive of. Industry is being educated very little by gas advertising, as far as I can see. Institutional advertising; good will advertising—yes. Domestic advertising has its effect upon the people who run the industry. But there is just as great a story to be told for gas in terms of industry as there was in terms of sprinklers by the sprinkler system people.

Look back over the background of your reading and think of the way that story of the safety of sprinklers has been built up in the minds of industry, and then ask yourself how comparable a job gas has done. And one of the reasons for it is, I believe, that the gas industry has been led and dominated, very naturally, by men whose minds were on finance, on engineering, on production.

For many years those were the dominant problems. Only lately the commercial problem, the market building problem, has begun to get very definite executive attention. Couple the fact that the executive was interested in finance and production primarily, and then give the fact that the advertising man on institutional advertising is reporting to that executive, in too many cases, and you will get immediately a reaction upon your advertising.

The advertising man writes his ad to please his boss, so that it will be approved, so it will carry out his policies, and the boss has his mind focused very largely on the institutional phases of this work.

I think one of the most important things in the gas industry, in the power industry, is to get a picture of the three divisions of a manufacturing business—finance, production and sales. And advertising is part of sales.

I think when an advertising manager has to report to the chief executive he is under a great handicap. I think the executive is doing him a great injustice. He should report to the sales manager and that sales manager should be a man with enough responsibility and authority and experience, courage, resourcefulness so that he can go ahead and do a job. But unless that man in charge of the advertising can be free from financial thinking, from engineering thinking, from production thinking, free to line himself up with commercial policies, with market building, with talking the language of the people, with forgetting the gas company—he hasn't a chance.

I don't know whether I have said anything of any value, whatever. I believe what I have said is true, and I have based it merely on a rather careful study of a lot of gas advertising and some contact and knowledge with the gas industry for the last twenty years.

I don't know how many men in this room ought to go in the corner and say, "Lord, is it I?" Probably some of you should. Probably some of you shouldn't.

But I do know this—that taking this industry as a whole, and taking the power industry as a whole, and the electric industry as a whole, public utility is dominated by largely the same kind of thinking. That is a just criticism.

Doing Good Work During the Holidays

IN its window displays, the Consolidated Gas Company of New York, New York, N. Y., has developed appropriate Christmas themes for its holiday window displays. Herewith are shown two displays that are doing good work during a season that is definitely limited in the sale of gas appliances.

Summing Up Dealer Cooperation

GEORGE L. CULLEN, sales manager of the Harrisburg (Pa.) Gas Company, said in a recent issue of the U. G. I. Circle, that dealer cooperation is no longer a new idea but a mutual and ever-present problem because of the many points of common contact between the plumber and the utility.

His article is clear and convincing. It bears repetition. Here it is, in part:

Four points are mentioned below for consideration, in effectively developing this field:

1. Intelligent and aggressive selling, with full knowledge of the appliance best suited to the customer's need.
2. A correct, economical, safe and guaranteed installation of the appliance.
3. Proper instruction to the customer in the use of the appliance.
4. A speedy service, always available to the user, for repairs and maintenance.

A cooperative arrangement between the utility company and the dealer will assure reciprocal benefits and profitable and increased sales for both.

A mutually satisfactory agreement, in its practical application, tends to—

1. Increase the volume of appliance business for the dealer and the utility company.
2. Eliminate the sale and installation of cheap and inefficient appliances.
3. Establish in the minds of the public a higher regard for utility service and standard appliances, and confidence in the merchandiser.

Safety to the customer is a most important factor in connection with the selection and installation of appliances. There should be a clear understanding between the utility company and the dealer as to approved and safe methods of installation. Attention should be also directed to the importance of offering only standard appliances—quality merchandise—at prices which will be fair to the public and allow the seller to recover his necessary costs plus a legitimate profit.

The utility company is in a position to offer the dealer—

The assistance of its special automatic water heater sales representatives to close sales or to assist in installations.

The assistance of its regular salesmen to help in closing sales.

The loan of suitable stock for the dealer's window display and show room.

Assistance in preparing window displays and newspaper advertising.

Sales literature imprinted with the dealer's name.

Appliances from stock at prices which will enable the dealer to meet with his overhead and make a fair profit.

Warehouse facilities reducing overhead and investment in stock.

Deliveries direct to destination of guaranteed appliances.

Newspaper advertising, mentioning the dealer.

Stock and repair parts for approved appliances.

The dealer in return is in a position to:

Agree to handle only standard appliances, or such as are built to present or subsequent approved specifications.

Make installations, particularly of automatic water heaters, in accordance with approved practice.

The human equation is the decisive factor in the satisfactory operation of any cooperative arrangement, and even among competitors business relations are found to be more harmonious when the individuals are acquainted one with the other.

The responsibility of initiating the move for cooperation is shared equally by the company and the dealer. The advantages of such cooperation should be explained to each dealer and definite assurance given of the company's willingness to cooperate.

There can be only one reasonable basis for cooperation; it must include fair-minded consideration of the interests of each side and result in tangible benefits to both, and to the customer.

A strong cooperative sales policy, backed by a code of procedure drafted by representatives of dealers and utility companies to give a better understanding of the needs of each may offer some solution of this important factor in the proper use of the utility's service.

Commercial Section

E. R. ACKER, Chairman — J. W. WEST, Jr., Secretary — SAMUEL INSULL, Jr., Vice-Chairman

Economic Aspects of Utility Merchandising Discussed at Dallas*

H. C. Davidson

By H. C. DAVIDSON
Secretary, Consolidated Gas Company of New York, N. Y.

THERE is always a tendency for every man to feel that his business problems are individual, and that he is afflicted with his own repertoire of troubles. Some of you may believe that your merchandising problems are unlike those of other parts of the country, and that they require special treatment on that account.

As I listened with great interest at the recent Atlantic City Convention, to some of your leaders unfolding the intricacies of the natural gas business, with its multiplicity of factors which cannot be controlled or foreseen, I confess that a feeling of insignificance crept over me. It is evident that your problems in the marketing of your product far exceed those of manufactured gas, due to the greater element of uncertainty between supply and demand, and the inadequacy of storage facilities in relation to your tremendous volume. Upon analysis, however, the differences appear to be only in degree or extent, and not in character.

Upon certain conditions, you may have promotional problems far more acute than anything we face, although it is hard to conceive of any keener competition than that which we experience in New York with other fuels. On the other hand, the economic advantage of natural gas over other fuels may tend to minimize the promotional aspects of your merchandise sales.

Taken as a whole, however, I believe that the merchandising problem of natural gas and manufactured gas, and of electricity for that matter, are fundamentally the same. So I stand before you squarely on the platform that your problem is our problem, and our problem is yours, and that we stand or fall together, dependent upon the soundness of the promotional policies of the industry as a whole.

The Merchandising Problem

What is the merchandising problem of the utilities? What is there about it that entitles it to the distinction of being one of the outstanding problems before the industry today?

I have referred to it as a combination of two questions—the internal problem of successful management, and the external problem of public understanding and public acceptance of the inherent promotional character of all utility merchandising. On one occasion my definitions of "internal" and "external" were criticized by a sales manager, who insisted that it should be described as an eternal problem. I agree it is probably that too.

The Internal Problem

You are all familiar with the internal problem of determining the amount you can afford to spend profitably for the purpose of inducing your customers to use more gas, either through existing appliances or through additional appliances; and you will agree, I believe, that we are still a long way from a satisfactory answer to that question.

In the analysis of these operations, the gas industry has not kept apace with the standards of research in commercial business. Generally speaking, it has been able to measure the results only in totals or at best in a few general classifications. The surface has barely been scratched in the scientific correlating of gas sales by the various classes of business, with expenditures for promotion allocated in like manner.

The tendency for each company to follow its own independent policies has died hard. There seems to have been little inclination to search out what is best for the industry as a whole, and to support that program. Nor have the companies made the most of their opportunities in gaining the benefits of inter-company comparisons, beyond the borders of affiliated organizations.

As a result, sharp differences exist in company policies as to merchandising methods, installment terms, trade cooperation, and even as to what is merchandising and what is promotion.

As an example, cases have come to my attention of installment policies in effect, requiring but a small "down payment," and permitting the balance to be spread over a period as long as five years, where the apparent aim seems to be to put appliances on the district at any cost. Such liberal installment terms are usually the result of over-zealous sales effort to make a showing, and are evidence, I believe, of the need of a good aggressive accountant on the job to ascertain the real facts.

Personally, I take issue sharply, as a matter of business judgment, with such policies, and believe they cannot escape being expensive in the final analysis.

I do not mean by that, however, to set up my opinion above the opinion of others. Instead, it is merely evidence that there are different schools of thought within the industry, which should be reconciled as a matter of "putting its house in order."

So much for the internal aspects of the question. There is evidence aplenty that we need to study it as an efficiency problem.

The External Aspect

The external aspect is far more important and more pressing. The repeated allegations of unfair competition by representatives of trade associations lay down a challenge to the industry as to the propriety of its merchandising policies, which strikes to the very root of its right to sell appliances as a necessary part of the promotion of gas.

In spite of the declarations of principles adopted a year or two ago by both the gas and electric industries with the interested trade associations, it is evident that the efforts are undiminished to bring about legislation to prohibit, if possible, the sale of appliances by the utilities, or to compel merchandise sales to be conducted as a non-operating enterprise, unrelated to gas promotion.

The unfortunate side of the question is that the appliance sales of the utilities are erroneously looked upon as merchandise sales that might otherwise have been made by the trade or local merchant. The agitators ignore the fact that the larger part of the effort and expense of the utilities is directed to extending the market for appliances into fields in which the plumber or dealer could not possibly afford to pioneer.

I will discuss that question later. I have referred to it this time merely as an evidence of the fact that much remains to be done to present the correct picture to the public.

You are probably familiar with the law enacted in Wisconsin in 1929, which completely divorces appliance sales from gas or electric operations. Under date of August 9, 1930, the Railroad Commission of Wisconsin issued an Order, pursuant to that law, which sweeps aside every contention of the Companies as to the promotional character of expenses involved, and as to their right to sell appliances as a

*Abstract of Address delivered before the First Southwest Natural Gas Sales Conference, Dallas, Texas, Nov. 13, 1930.

part of promotion. It requires that every conceivable item which may be related in any way to the sale of appliances, directly or indirectly, be classified to a non-operating account. The Order goes so far as to prescribe that there shall be excluded from operating expenses, such indirect items as "a proper proportion of General and Miscellaneous Expenses," "taxes assignable to stocks of merchandise carried or to space occupied for merchandising work," and "depreciation on buildings, equipment," etc., to the extent that such property is assignable to merchandise operations.

I do not know what course the companies in Wisconsin will follow in the matter. Presumably the logical solution is the incorporation of separate sales companies. It places upon the utilities of the State, however, a difficult responsibility to make intelligent and accurate division between promotion and merchandising expenses, and makes particularly urgent uniform treatment of expenses which are in part merchandising and in part new business.

We read also of efforts by the trade organizations to bring about similar action in other States. I believe I have pictured enough of the present conditions to give evidence of the educational problem which the utilities face, to bring about a better understanding of the underlying principles of utility merchandising, and to drive home the advantages accruing to all concerned, from the promotional efforts in question.

Fundamental Principles of Utility Merchandising

Now what are the true fundamentals of appliance sales by the industry?

The first basic fact, which is familiar to all of you, is that the companies are merchandising but one major product—gas service. They are not merchandising appliances in the ordinary commercial sense of that term. Instead, appliance sales represent but one item in the program of gas promotion, which is directed toward increased use of gas through existing appliances, as well as through the introduction of new appliances. General advertising, special displays, Home Service activities, together with appliance sales and other related operations, are all integral parts of one effort.

You may consider that observation trite. Nevertheless, there are companies who do not subscribe to that viewpoint, and who profess to be carrying on upon a profitable basis, usually through a subsidiary, an honest-to-goodness merchandise business in gas appliances apart from the program of gas promotion. When the conditions are analyzed, however, it generally develops that the appliance company is handling only the cream of the merchandise sales, or that there is some established basis of reimbursing it for new business expenditures made by it on behalf of gas promotion.

May I summarize point number one then, that all appliance sales of the utilities are promotional in their essence, regardless of the form of corporate organization under which they may be conducted.

The second basic point I wish to stress it that the utilities are not selling the same appliances, which they would be offering if they were only marketing commodities, as does the local merchant. Mere marketability alone does not determine the selection of appliances they offer for sale. It is necessary that they carry a complete line which will include every service that gas is economically entitled to render. That includes not only appliances which a dealer could handle profitably, but also types requiring pioneering work into fields where the educational effort or engineering service would make the sales cost prohibitive, except for the compensating benefit to the gas load.

As evidence of this fact, may I refer to the experience of my own company. During the first nine months of 1930, our appliance sales within the City of New York amounted in round figures to $5,000,000. Of that total, approximately $1,500,000 represented domestic appliance sales. In other words, the appliances coming within the category of merchandisable commodities represented less than a third of the total. I firmly believe that if that $5,000,000 of sales had been left to outside agencies, at least one-half would have been lost to gas, in the competition with other fuels and with electricity.

The common error into which the trade representatives are prone to fall in this regard is to assume that they could have done the same business, if the field had been left to them. Furthermore, we find them frequently describing expenses purely promotional in character, as elements of merchandising costs. They look upon promotion as a part of merchandising, instead of merchandising as a part of promotion.

That is particularly apparent in a recent newspaper comment which has come to my attention. It is entitled "A Gift to the Gas Company" and goes on to characterize *promotion expenses* as *merchandising losses*, under the caption of "Each consumer must pay about $1.10 a year of the loss on sales of appliances." It is evident that the author of the article had no idea that the "three gas engineers working on industrial sales," or the "advisory cooking expert" (to which he refers) would be equally necessary, even if the company itself sold no appliances. Also in reference to the further title of "The Manager here admits the Department has an annual deficit of about $100,000," I am tempted to comment that the company missed an opportunity in not spiking the misuse of the word "deficit." There is no more ground to apply the term "deficit" to New Business Expense than to Production Expense or Distribution Expense.

A third point in this discussion of principles is the fundamental difference between utility merchandising and that of the trade, in the yardstick of successful accomplishment. For the utility, much more is involved in that measurement than the income statement of appliance operations. A broader measure is necessary. The story is not complete without the load building benefit to record the credit side of the operation.

Load building results should be the starting point of all promotional expenditures, and no doubt are in an approximate way. Due to the difficulties of accurate estimates, and uncertainty of the results (for the anticipated future consumption of any appliance is at best a guess), the companies compiling these data have been hesitant about permitting public use of the figures, or even inter-company comparisons on any general scale.

It is scarcely necessary to stress in this gathering the importance of load building statistics. I do take occasion, however, to urge the development of such statistics by all companies, and the free interchange of results between companies, until there shall emerge an established practice in the industry, to place an approximate index of load building value upon each type of appliance.

The reality of load building, as the dominating influence upon appliance operations, needs to be driven home to the public. The industry has not yet successfully dispelled the lurking suspicion that load building is merely a subterfuge to cover merchandising losses. It needs to be set up in actual figures in such form that the public may be able to understand it and grasp its true significance.

Another fundamental of appliance sales is that the utilities are amenable to the same economic laws as other business. If they are to thrive, their promotional expenses must earn a return exactly as in any other business. The portion of that return which may be assigned to merchandise sales or to new business activities is relatively unimportant, and is largely a matter of bookkeeping practices. The two combined, however, must produce sufficient benefit to the gas business to make the expenditures ultimately a resultant economy in the cost of gas.

Also in this discussion of fundamentals, may I comment that the gas companies must continue in the appliance business as a matter of economic necessity for their self preservation.

As was so ably stated by President Paige of the American Gas Association, in his address on "Sales Allies" at Atlantic City, the gas companies entered the appliance business not from choice, but from necessity for their survivial, and must continue in it for the same reason. As he put it, "dealers may fill an existing demand, but the companies must create it."

Our experience with the development of gas refrigeration in New York is a striking example of that fact. I estimate that the sale of refrigerators by our System Companies during the year 1930 alone, will add more than $500,000 of revenue from gas sales in 1931.

If that business had been left to outside agencies, it would probably never have become established. Certainly it could not have developed to its present proportions. The bulk of it would have been lost to electric refrigeration.

I believe that the gas companies will always be called upon to take a position of leadership in appliance sales. Too much is at stake, in competition with other fuels

and in maintaining proper standards of efficiency and safety, to permit the companies to relinquish that leadership, even if they so desired.

On the other hand, the utilities do not desire, I believe, to interfere with the sale of appliances by other agencies. There seems to be everything to gain, and nothing to lose, through the coordination of all sales effort to the common good, in a policy aptly described by Mr. Paige as "live and let live."

What of the Future

Progress toward any ideal is necessarily slow and hesitant. There are, however, some steps toward constructive progress in the merchandising problem, which seem to be clear.

First, there is need of a definite broad policy, which will have the solid support of the industry itself, protecting the inherent promotional rights of the companies, and at the same time deserving of the confidence of the public as to the propriety of the practices involved.

The road to clear thinking on this question will require vision and the will to reach common ground. There is no place in the picture for the isolated self-satisfied attitude, that merchandising policies are purely local questions, which can be settled without regard to the interests of others. The industry will stand or fall as a whole upon the soundness of its merchandising policies, and will pay heavily for pig-headedness on the part of the few who may not support the majority findings.

It is gratifying to learn that the A.G.A. is to give study to this subject through a General Committee.

There is, however, a more tangible form in which we, as sales executives and accounting officers, can contribute our bit on this question. We can determine the facts as to these operations in our own companies. We can go further, and compare our results with others, until we ascertain the conditions that are representative of the industry.

This has been the objective of the Joint Committee on Merchandise Accounting. Organized for the purpose of developing adequate merchandising records, it faced first the necessity of establishing the relationship of this operation to the gas business. In its recent report, it has recommended a classification of accounts for appliance sales, and has related them to gas promotion in a suggested statement form made a part of the report, in which the results of merchandising are combined with new business expenses.

In my own Company we adopted the Committee recommendations practically verbatim, and have had them in effect for several months. We have found them to work out very satisfactorily. At present we are subdividing appliance sales, as to all direct items, into six subdivisions consisting of domestic, hotel and restaurant, industrial, house heating and water heating, refrigeration, and miscellaneous, the latter including lighting fixtures and kitchen conveniences. It is my ideal that some day, when we have the tabulating card form of consumers accounting, we may have fifty or a hundred different subdivisions, and may make direct comparison between the amount of appliance sales and the volume of gas sales in each class of business served.

As you are all well aware, the practical problem in any financial summary of appliance sales is to determine how much of expenses common both to merchandising and to promotion should be assigned to each. What part of such items as management salaries, rent, advertising, and salesmen's compensation, apply to each activity? The line of division is not easy, and we need the benefit of interchange of ideas to do a good job.

In our study of this question, we have endeavored to determine how much more we are spending for these items under present conditions than we would have spent if we sold no merchandise ourselves, and have assigned to merchandising that excess. It is surprising what a large percentage of some items would be necessary for promotion alone, even if the actual sales were turned over to an outside agency.

One of our affiliated electric companies for a long time sold no appliances itself, and it may be of interest to you to know that their cost of promotion has been substantially less, since they have been selling appliances. So merchandising does not necessarily result in increased new business expenses.

To give you some definite idea of our actual division between merchandising and promotion, we assign to merchandising one-half of management salaries in the Domestic Division and the Hotel and Restaurant Division, based upon the estimate that one-half of our present staff would be required even if we sold no appliances ourselves. In the Industrial and House Heating Divisions, however, we would require the same staff for promotion alone. There we distribute the management costs to each operation, in the same ratio per dollar of sales, rounding the figures to 10 per cent merchandising and 90 per cent to new business.

Commissions paid to salesmen are classified to Merchandising, and the base salaries and load building bonuses to New Business.

Our adverstising has all been primarily designed to stimulate the use of gas, and the appliances which may have been shown were merely incidental to that end. After much discussion, we have adopted the same distribution of 10 per cent merchandising and 90 per cent new business, on the theory that although our advertising would be as much or more if we sold no appliances, merchandise sales also reap a benefit from the expenditure.

It is possible only to touch upon a few high spots as to the application of the classification, but I will be glad to answer any questions desired regarding it, if time permits.

May I add also that we are making this merchandising study for statistical purposes only. In our general books, we classify the total of these items to the prescribed New Business expense accounts.

The Joint Committee has thus far only provided a standard yardstick for the measurement of merchandising and new business activities. There remains the task of applying it, both as to financial and load building results, and of reaching composite totals which will be representative of the industry.

Frankly, gentlemen, I earnestly bespeak your support and your assistance to make these studies of practical value to the industry.

In closing, may I remind you again that the merchandising problem of the utilities today is essentially a question of policy. Underlying that question of policy, however, are many pertinent questions of fact, which must be determined and interpreted as a foundation for sound policies in the future.

Upon us as sales and accounting officers of our companies rests the responsibility of determining those facts. The initial problem therefore is ours, and its successful solution depends upon the closest co-operation, not only in our respective companies, but throughout the industry.

Movies Show Use of Gas

(Continued from page 539)

presses set in a row being used. They are formed, several to a strip, and blanking is the last operation. The first four operations are forming to raise the hub and then follow in order perforating, bell mouthing, stamping and blanking. These presses make 198 r.p.m. and are operated at 90 per cent of capacity.

The reel ends or flanges are then blued and rust proofed in a battery of rotary, gas-fired furnaces, each about 6 feet long and 4 feet in diameter. They are of the titling type and consist of an outer shell of refractory lined steel enclosing a metal retort which is rotated by motor through a speed reduction gear train. A vent in the top of the shell permits the products of combustion to escape into a common duct serving the entire battery from whence they are exhausted to the outside of the building.

A series of gas burners in the bottom of each is supplied with a gas air mixture of the proper ratio for complete combustion, air being supplied at 1½ lbs. and gas at 4 in. pressure. An overhead monorail serves the entire line and is used for handing the material. Each furnace will process 750,000 parts daily, the heating period being three hours and the temperature 800° F.

Natural Gas Department

H. C. COOPER, Chairman E. J. STEPHANY, Secretary H. L. MONTGOMERY, Vice-Chairman

Bureau of Mines Reviews Year's Work

MORE than 112,000 employees of the gas, mining, quarrying, metallurgical and oil and allied industries were trained in first aid or mine-rescue methods during the fiscal year ended June 30, 1930, says Scott Turner, director of the United States Bureau of Mines, in his annual report to the Secretary of Commerce. The number surpasses by 31,000 that attained in any previous year, bringing the total number so trained by the Bureau since its establishment to approximately 480,000. Many large mining concerns are manifesting their interest in this work by having these courses given to their entire working force, and during the year 181 mines or plants were given bureau certificates showing that one hundred per cent of their employees had been trained.

The Bureau of Mines continued to make steady progress with its general educational program looking toward the attainment of safer and more healthful working conditions among the employees of the Nation's mineral industries, Mr. Turner stated.

The bureau continued the study of the problems of the great natural gas and petroleum industries with a view to the development of more efficient methods of production, transportation, refining and utilization of the products obtained from these valuable natural resources. Special attention is being given to various processes looking toward the recovery of a larger percentage of oil in underground deposits, a matter of great importance when it is realized that only about 20 per cent of the oil in such deposits is now recovered. By conducting special engineering studies of important oil producing fields, the bureau is assisting operators in their efforts to control underground waters that threaten the continuance of successful development. Studies are being conducted looking toward the reduction of the enormous evaporation losses of *petroleum and gasoline* that occur annually. Problems affecting the flow of natural gas through pipe lines and the gauging and controlling of natural gas wells are also being studied. Valuable information regarding the characteristics of representative crude oils from different parts of the United States and the world in general is being provided. Progress is being made in a study looking toward the utilization of the "black oils" of the Rocky Mountain region, hitherto largely undeveloped. Oil shale studies were continued. An investigation designed to afford information regarding the obtaining of numerous valuable by-products from natural gas is in progress.

The new helium production plant near Amarillo, Texas, produced almost 10,000,000 cu.ft. of helium during the fiscal year. This is the largest production of helium ever accomplished in a like period. Cost of production of this rare, nonflammable gas, essential in the aviation of dirigibles, was much lower than has ever been attained anywhere.

The bureau has continued to study problems in efficiency in the use of fuels, a field in which it has been a pioneer. This work includes the making of thousands of analyses of coals, the study of combustion problems, the utilization of low-grade fuels, the prevention of smoke, the study of new types of fuel, the preparation of coal, and the carbonization of coal with attendant conservation of by-products. An important problem undertaken is the determination of the gas-making and coking characteristics of the different coals of the country. As the result of the bureau's fuel-economy service, large sums are being saved annually in the operation of Government heating and power plants.

In addition to studying the scientific and technical problems of the mineral industries, the bureau is giving increased attention to economic conditions and problems. This involves the collection and dissemination of statistical data regarding the production, consumption, distribution, and storage of the numerous essential minerals. The results of these statistical and economic studies are widely used by the mineral industries in keeping in close touch with market trends and in the solution of business problems.

The Coal Division of the Economics Branch conducted the following-named special investigations during the year: Sources of bituminous coal used for railway fuel; the retail dealer as a distributor of coke; world energy supplies, studies in fuel efficiency; production of coal-tar crudes; production and distribution of hard coal outside of Pennsylvania; the economics of strip coal mining; screening equipment at bituminous coal mines; use of loading machines and conveyors, 1929; engineering advances in coal mining, 1913-1928; and the trend of coal demand.

The Petroleum Economics Division prepared a critical analysis of available data on natural gas supply and demand and conducted regional and distribution surveys dealing with fuel oil, asphalt, motor fuel, petroleum coke, and other petroleum products. The Division of Mineral Statistics prepared summarizations of the production of all mineral commodities of commercial importance. The Common Metals Division published elaborate long-time summarizations of world production of zinc, lead, gold, and silver. The Rare Metals and Non-Metals Division conducted economic studies on a wide variety of mineral industries, and was instrumental in numerous instances in bringing buyers and sellers together to their mutual advantage. The Division prepared numerous Information Circulars summarizing the mining laws of the different foreign countries.

Accidents to the men employed in the mineral industries of the country result annually in approximately 2,800 deaths and more than 200,000 lost-time injuries. The economics branch conducts statistical canvasses of the number and causes of accidents to persons employed in these industries. Information of this nature is essential to the study of effective means of accident prevention.

W. P. Canavan Named Vice-President

WILLIAM P. CANAVAN, business and civic leader of Oklahoma City, has been appointed a vice-president of the Oklahoma Natural Gas Corporation in executive charge of western Oklahoma properties including Oklahoma City, Guthrie, Enid, Shawnee, Ardmore, Norman and El Reno. Heretofore the entire territory served by the company in Oklahoma has been handled as a single unit from the Tulsa office.

The corporation also announces the promotion of J. W. Duvall of Oklahoma City to superintendent of the Industrial Sales Department for the entire system. He succeeds R. H. Ulrich of Tulsa, who has been appointed general assistant superintendent of the Southern Natural Gas Corporation with headquarters at Birmingham, Ala.

E. S. Cole Passes Away

E. S. COLE, superintendent of the Southern California Gas Company's Ventura Division, died October 22. During his years spent at Ventura, Mr. Cole was actively engaged in construction of large pipeline projects for the company.

Industrial Gas Section

D. W. CHAPMAN, Chairman — C. W. BERGHORN, Secretary — A. J. PETERS, Vice-Chairman

It's Not the Heat, It's the Humidity

By EUGENE D. MILENER
Industrial Research Representative
American Gas Association

AN entirely new system for cooling buildings, which costs less to operate and supplies a "superior air" than those now in use, has been perfected and installations made. This new cooling system, with a very slight change, can be made into a combination unit which will cool a building in the summer and heat it in the winter.

This system has been developed by the Silica-Gel Corporation, Baltimore, Md., which company has been cooperating for some time in this development with the Committee on Industrial Gas Research of the American Gas Association. Briefly, the principle is to remove the sensible heat from the air in various coolers and the moisture in Silica-Gel beds, this moisture being driven out of the beds later by gas heat.

First off, it would be well to explain the term "superior air" which is relative and open to argument. Human comfort is determined by the ratio of heat and moisture in the air and not by its temperature alone. This ratio is flexible within certain limits; for instance, 50 per cent moisture at 75 deg. F. or 40 per cent moisture at 80 deg. F. will serve as an illustration. There is a ratio, however, which brings the greatest comfort to the human body, and this ratio has a lower moisture percentage than can be supplied economically by the present day systems employing mechanical refrigeration for cooling. Hence, the use of the term "superior air."

An installation of one of these new systems has been recently made by the Safe Deposit and Trust Company, also of Baltimore, and it has proven entirely successful. The cooling and air conditioning equipment was installed by the Silica-Gel Corporation and the gas burner equipment by the Consolidated Gas Electric Light and Power Company of Baltimore. The firm of Reeder, Eiser and Aker were the consulting engineers. The system consists of several units, most prominent among which is the steel box containing the three Silica-Gel beds. This box is about 15 feet long, 4 feet wide and 4 feet high. Air is first pulled through an automatic air filter which removes all suspended dust, particles, etc., and suppiles clean air to the adsorption fan. This adsorption fan furnishes the necessary pressure to drive this cleaned air through one of the Silica-Gel beds.

This bed adsorbs all of the moisture from the air but in so doing it releases the latent heat of evaporation and the air leaves the bed at from 125 to 150 deg. F. according to the moisture content of the fresh air. From the Silica-Gel bed this heated air passes through an intercooler consisting of a steel tank containing finned water coils through which tap water flows. In this intercooler the temperature of the air is reduced to 80 deg. F.

The air is now forced through another of the three beds which is still hot (about 300 deg. F.) as it has just been activated, and any remaining moisture removed. As it leaves the second bed the air is about 300 deg. F. and to cool it it is forced through an aftercooler where the temperature is reduced to an average of 80 deg. F. This aftercooler is identical to the intercooler in design and construction.

A certain percentage of moisture is necessary, however, and to obtain this, air is pulled from the building and mixed with this "bone dry" air and the exact ratio obtained. This mixture is then passed through the main cooler, which is similar to the other two coolers, where it is cooled to 70 or 75 deg. F. This prepared air, which contains the proper amount of moisture and correct degree of temperature, is taken by another supply fan and introduced into the building.

In explaining this process it might be well to state that the three beds are used on an intermittent cycle, the operating periods varying from a half to an hour. During these cycles two of the beds act as adsorbers as previously explained while the other is being activated or dried. After these two operations have been completed then the valves or dampers are automatically shifted so that one of the beds that has been adsorbing is now activated, and so on.

The term activation, as here used, means drying out, and this process is accomplished by passing heated air through a bed that has just been acting as adsorber and is now saturated with moisture. This hot air picks up this moisture and is vented to the air leaving the bed dry and ready to be reused as an adsorber again. The period of adsorption is twice that of activation and therefore two of the beds are used as adsorbers while one is being activated.

The air used in activating is heated in a gas-fired furnace to about 350 deg. F. prior to being forced through the beds. This furnace, or air heater, is constructed of sheet steel, heavily insulated and lined with refractory material. It is about 8 feet × 6 feet and 7 feet high. Baffles are placed in the heating chamber to properly mix the hot products of combustion with the fresh air. Heat is supplied by a single gas burner firing directly into the heating chamber. A nozzle mixing blast burner is used, air being furnished at three ounces pressure and gas at four inches of water. A fan blower supplied the air at this pressure.

In case the pilot light should go out, for any reason, a safety device is used which automatically cuts off the main gas supply. This consists of a sealed brass tube containing a liquid and the expansion of this liquid, acting on a piston causes a valve in the gas line to close.

This particular air conditioning system supplies 7,500 cubic feet of bone dry air per minute to the building with an average gas consumption of 2,000 cubic feet of 500 B.t.u. gas per hour. The cubical content of the building is about 875,000 cubic feet. The only other power requirement is a small amount to drive the air through the beds and coolers. The cycle is continuous and automatic and the control is accomplished through motor driven cams which open and close the dampers through the intermittent operations of pneumatic pistons. The cycle periods are controlled with a time clock.

The proper activation temperature is regulated by a thermostatically controlled solenoid valve in the gas supply line to the furnace and a chart of this is kept by a recording pyrometer.

Silica-Gel has the same chemical analysis as sand (SiO_2) but physically it is highly porous and it is this physical characteristic which makes it valuable as an adsorber. It is made from sodium silicate (water glass) and sulphuric acid.

Directs Safety on Pacific Coast

James Barrington

THE personnel of Coast Counties Gas and Electric Company, Santa Cruz, Calif., has been rapidly expanding during the past several months, the latest addition to the staff being the appointment of James Barrington as Safety Supervisor.

As head of the Red Cross First Aid Work in the Santa Cruz area for the past several years, during which time he has aided in the instruction for Scoutmasters and other similar work, Mr. Barrington is ably fitted for his new work.

Previous to his appointment, he has been connected with the meter department in the Santa Cruz District, and his appointment came as recognition of his continued activity in safety work while employed in other departments of the company.

Testing Laboratory
R. M. CONNER, Director
MANAGING COMMITTEE
R. W. GALLAGHER, Chairman N. T. SELLMAN, Secretary

Ironers and Unit Heaters Now Tested for Approval

APPROVAL requirements for gas unit heaters were incorporated in the American Gas Association Approval Requirements for Central Heating Gas Appliances as revised for 1931. A. G. A. Approval Requirements for gas-heated ironers also have been completed and the first edition of these requirements was published October 1, 1930.

New and revised approval requirements do not become effective until one year after such requirements are published in their final form, therefore, the above requirements do not become effective until September 1 and October 1, 1931, respectively.

However, unit heaters and gas-heated ironers may now be sent to the Laboratory for test and if found by the Laboratory to comply with all of the performance requirements, as well as construction requirements directly affecting safety, temporary approval will be given to such appliances. Such temporary approval is effective until December 31, 1930, at which time it can be renewed providing a factory inspection, conducted by a Laboratory inspector, shows that such appliances are being manufactured exactly as the ones given temporary approval.

Renewal of approval under these conditions entitles the manufacturer to temporary approval of such appliances until the requirements become effective. Only complete approval can be given to appliances after the date specified for new requirements to become effective. Under these conditions it becomes necessary for manufacturers having temporary approval on gas unit heaters or gas-heated ironers, to see that such appliances comply with the requirements in detail on or before the date specified for such requirements to become effective in order to retain approval of those appliances after that date.

Any appliances tested after the effective date of the requirements must comply with such requirements in their entirety in order for approval to be granted to them.

Inspections for 1931 Under Way

ANNUAL inspections by the Laboratory for renewal and extensions of approval to gas appliances for 1931 were started early in October. This work is being carried on by five Laboratory inspectors who will spend their full time for more than three months completing the inspections of manufacturers and distributors of approved gas appliances. Inspectors will travel approximately 30,000 miles and will visit some 240 manufacturers in the course of these annual inspections.

Laboratory Activities Continue to Increase

THE amount of testing and research work conducted at the Laboratory during the last fiscal year was by far the largest in the history of the organization. It is surprising to note that more gas appliances were tested last year than during any similar period since the Laboratory was founded. With the exception of two months, more gas ranges were tested during October, 1930, than during any other month since 1925.

The Laboratory, being the logical center for the testing and research activities of the American Gas Association, is being looked to for the solution of many problems both in the distribution and utilization of gas, and problems connected with the operation of both domestic and industrial appliances.

Increased activities at the Laboratory have necessitated the employment of additional engineers and office help. Considerable reconstruction work was recently done within the building to provide additional office space so that the various departments of the office could carry on their duties with a higher degree of efficiency.

Laboratory Visitors on Increase

AN exceptionally large number of people have visited the Laboratory within the last few months, among them being manufacturers of appliances, gas company officials, manufacturers of "bottled gas," magazine editors and writers, representatives from England and Japan as well as many others connected with, or interested in the gas industry. The management heartily welcomes all visitors to the Laboratory, and tries to give them the best attention and information possible.

Laboratory Issues New Publications

A revised edition of the booklet, "Laboratory Testing Policies," has been published recently, by the Laboratory. This booklet contains information of value to every manufacturer of domestic gas appliances, as well as being of interest to those who wish to become familiar with the operations of the American Gas Association's Laboratory. Some of the subjects treated in detail in this booklet are "Instructions to Manufacturers Submitting Appliances for Test," "Laboratory Procedure," "Approval and Listing," "Tests Required," as well as information concerning inspections for extension and renewal of approval, test and inspection fees, etc. Copies of this booklet may be obtained by writing to the Director of the A.G.A. Laboratory, 1032 East 62nd Street, Cleveland, Ohio.

An interesting booklet on the design and arrangement of the Laboratory building and the activities carried on there, entitled, "A Trip Through the A.G.A. Laboratory," was published in October and distributed at the annual convention of the Association in Atlantic City. Copies of this booklet also may be obtained free of charge by writing to the Laboratory Director.

Space Heater Tests

ALL manufacturers of space heaters submitting appliances to the A.G.A. Laboratory for test are now required, under a ruling of the Sub-committee on Approval Requirements for Space Heaters and the A.G.A. Approval Requirements Committee, to fill in a booklet, giving a complete description of the appliance submitted, together with illustrations and blueprints. The descriptions are checked by the Laboratory against the appliance and are filed. This procedure assists the Laboratory in keeping a complete record of all space heaters tested.

New Approval Requirements

REVISED editions of the A.G.A. Approval Requirements for central heating gas appliances and for gas water heaters were published in September and distributed to all members of the Association. The requirements for central heating gas appliances now include requirements for boilers, basement furnaces, floor furnaces and unit heaters. The requirements for water heaters apply to storage, tank and instantaneous water heaters. These requirements are effective September 1, 1931.

The third edition of the A.G.A. Approval Requirements for Clothes Dryers was published October 1 and will become effective October 1, 1931.

Gas Appliance and Equipment Developments

For Gas Mixing

Cutler-Hammer, Inc., 15 Twelfth St., Milwaukee, Wis., announce a new gas mixing instrument—the "Calorimixer"—which is the principal unit of the C-H gas mixing control system. A pamphlet describing the new Calorimixer may be obtained from the manufacturer upon request.

Issues Bulletin

The Standard Gas Equipment Corporation, 18 East 41st Street, New York, N. Y., has issued a bulletin devoted to new features of merchandise or products not previously announced.

Publishes Catalog

The Mine Safety Appliances Company, Pittsburgh, Penn., has just published the M-S-A First Aid Materials Catalog No. FA-2 which will be of special interest to all users and buyers of first aid materials. It is a thirty-six page catalog, profusely illustrated and covers the complete line of first aid materials manufactured by this company for industrial and mining use. The completeness of the catalog is illustrated by the fact that it contains such items as poison ivy treatments, auto kits, hot pads, mercuro-compresses, bandages, etc. Copies will be furnished gratis to those interested in first aid work, upon application to the company.

A New Small Ditcher

A vertical boom ditcher that is only 4 feet wide and 11 feet 6 inches long, and when digging is no higher than a tall man's head—a ditcher that will dig a trench from 5 inches to 8 inches wide, and from 0 to 3 feet deep at varying speeds from 15 inches to 20 feet a minute—is the latest achievement of the Barber-Greene Company of Aurora, Illinois.

For the first time, the entire line of Barber-Greene Materials Handling Machinery—which covers every field from pipe line cutting to pouring concrete on building projects—has been put into a single book, which may be had on application.

Clow Active at Atlanta

Offices and shops of the new Goodyear-Zeppelin plant at Akron, Ohio, have been equipped with Clow Vented Gasteam radiators as the sole medium of heating, it was announced here Monday by A. H. Rumbold, manager of the Atlanta, Ga., branch of the Clow Gasteam Heating Company. The Atlanta branch of the Clow company, with executive offices and warehouses, was established in April of this year to concentrate all the activities formerly divided among sales offices in Birmingham and Jacksonville. It serves Georgia, Florida, Alabama and South Carolina.

Contributions by manufacturers of gas appliances and equipment to this department will be welcomed by The A. G. A. Monthly. On account of space limitations, all announcements of new products, improvements, etc., should be limited to about 100 words. No attempt will be made to describe each product or give details of construction. For such details address the manufacturer direct. Where justified, photographs will be used to illustrate these brief items. All contributions to this department should be addressed to C. W. Berghorn, Secretary, Manufacturer's Section, American Gas Association, 420 Lexington Ave., New York, N. Y.

Tells Story of Refractories

The Harbison-Walker Refractories Company, Pittsburgh, Pennsylvania, has completed a 5,000-foot motion picture illustrating modern methods employed in the manufacture of refractories. This film, perhaps the most complete story of refractories ever made for the screen, is available, without cost, to technical societies, engineering organizations, industrial organizations, universities, colleges, technical schools and research laboratories. Applications should be made to Harbison-Walker Refractories Company, 1800 Farmers Bank Building, Pittsburgh, Pa.

Warm-Air Handbook

The Bryant Heater & Manufacturing Company, Cleveland, O., has issued a new warm-air furnace handbook illustrating and describing its complete line of gas-fired warm-air furnaces. This includes both gravity and forced air jobs. The handbook will also appear in the 1931 issue of Sweet's Architectural Catalog.

New A. G. A. Members

THE following manufacturers recently have been enrolled as members of the American Gas Association:

U-Ni-Matic Furnace Co., Los Angeles, Calif.

Golden Gate Sheet Metal, Oakland, Calif.

General Heating Equipment Co., Lynn, Mass.

Handley Brown Heater Co., Jackson, Mich.

The Burnover Stove Corp., Jamestown, N. Y.

Beach-Russ Co., New York, N. Y.

Ferro Machine & Foundry Co., Cleveland, O.

W. S. Tyler Co., Cleveland, O.

Tulsa Stove & Foundry Co., Sand Springs, Okla.

Gray & Dudley Co., Nashville, Tenn.

Lee B. Mettler Co., Los Angeles, Calif.

Grayson Heat Control, Inc., Lynwood, Calif.

Hammer-Bray Co., Oakland, Calif.

Koil-Les Heater Co., Geneva, Ill.

Western Pipe & Steel Co., Blue Island, Ill.

The Auto Stove Works, National Stock Yards, Ill.

The Meyer Furnace Co., Peoria, Ill.

The Majestic Co., Huntington, Ind.

M. S. Skinner Co., South Bend, Ind.

The Utility Supply Co., Salina, Kans.

A. Weiskittel & Sons Co., Baltimore, Md.

Vulcan Manufacturing Co., Kansas City, Mo.

Buxton-Skinner Printing and Stationery Co., St. Louis, Mo.

1900 Corp., Binghamton, N. Y.

Hauck Manufacturing Co., Brooklyn, N. Y.

The Warm Air Furnace Fan Co., Cleveland, O.

Indiana Foundry Co., Inc., Indiana, Penn.

Pittsburgh Incinerator Co., Pittsburgh, Pa.

H. H. Robertson Co., Pittsburgh, Pa.

The Wyoming Shovel Works, Wyoming, Pa.

Jones Hollow Ware Co., York, Pa.

Chattanooga Stove Foundry Co., Chattanooga, Tenn.

Gas Lines Spread in Oklahoma

WINTER weather is not retarding natural gas companies in Oklahoma in their efforts to secure natural gas franchises and extend their lines. Among Oklahoma towns that have recently voted natural gas franchises or are scheduled to hold elections are: Warner, to the Quinton Natural Gas Corporation; Cheyenne Utility Company; Coyle, to the Pact Gas Company; Buffalo, to the Buffalo Public Service Company; Verden to the State Fuel Supply Company. Carmen, Aline and Dacoma have each voted natural gas franchises by overwhelming majorities to the Winchester Oil & Gas Company. The last three mentioned towns have good prospects of securing gas before spring as they are in close proximity to existing lines of the Winchester Oil & Gas Company.

Monthly Summary of Gas Company Statistics

FOR MONTH OF SEPTEMBER, 1930

Issued November, 1930, by the Statistical Department of the American Gas Association
420 Lexington Avenue, New York, N. Y.

PAUL RYAN, Statistician

COMPARATIVE STATISTICS OF 148 MANUFACTURED GAS COMPANIES FOR THE MONTH OF SEPTEMBER, 1930

	Month of September			Nine Months Ending September 30		
	1930	1929	Per cent Increase	1930	1929	Per cent Increase
Customers	8,930,074	8,864,354	0.7	See September		
Gas Sales (MCF)	26,869,675	27,843,766	— 3.5	265,302,959	264,283,061	0.4
Revenue (Dollars)	29,495,555	30,136,161	— 2.1	282,876,811	281,680,191	0.4
Gas Produced and Purchased (MCF)						
Gas Produced						
(a) Water Gas	13,186,446	13,868,525	— 4.9	132,238,556	139,408,707	— 5.1
(b) Retort Coal Gas	2,513,707	2,531,325	— 0.7	22,670,621	23,558,164	— 3.8
(c) Oil Gas	516,088	488,355	5.7	5,680,527	5,770,009	— 1.6
(d) Coke Oven Gas	3,969,403	3,838,164	3.4	36,278,706	34,477,507	5.2
(e) Oil Still Gas	192,834	99,877	—	1,342,750	141,681	—
(f) Total Gas Produced	20,378,478	20,826,246	— 2.2	198,211,160	203,356,068	— 2.5
Gas Purchased						
(a) Coke Oven Gas	8,949,384	9,258,160	— 3.3	83,347,035	78,726,503	5.9
(b) Oil Still and Natural Gas	249,753	224,601	11.2	2,011,029	2,166,063	— 7.2
(c) Total Gas Purchased	9,199,137	9,482,761	— 3.0	85,358,064	80,892,566	5.5
Total Gas Produced and Purchased	29,577,615	30,309,007	— 2.4	283,569,224	284,248,634	— 0.2

COMPARATIVE STATISTICS OF 125 NATURAL GAS COMPANIES FOR MONTH OF SEPTEMBER

Customers						
Domestic (Including House Heating)	3,961,279	3,874,392	2.2			
Commercial	166,507	165,044	0.9			
Industrial	12,881	12,652	1.8*			
Main Line Industrial	3,463	2,746	26.1	See September		
Miscellaneous	2,282	1,490	—			
Total	4,146,412	4,056,324	2.2			
Gas Sales (MCF)						
Domestic (Including House Heating)	11,073,173	11,674,926	— 5.2	190,403,368	191,357,724	— 0.5
Commercial	1,474,773	1,594,720	— 7.5	22,186,646	22,236,255	— 0.2
Industrial	14,701,739	16,991,948	—13.5	135,386,069	144,282,028	— 6.2
Main Line Industrial	4,135,975	3,568,831	15.9	39,035,425	33,206,075	17.5
Miscellaneous	389,571	436,620	—	4,471,904	4,319,254	—
Total	31,775,231	34,267,045	— 7.3	391,483,412	395,401,336	— 1.0
Revenue (Dollars)						
Domestic (Including House Heating)	8,823,394	9,020,142	— 2.2	132,751,366	132,209,381	0.4
Commercial	846,107	971,649	—12.9	12,412,798	12,536,834	— 1.0
Industrial	3,595,582	4,414,829	—18.6	35,391,622	39,274,320	— 9.9
Main Line Industrial	612,224	474,727	29.0	5,810,059	4,821,794	20.5
Miscellaneous	75,805	88,040	—	1,042,811	1,222,822	—
Total	13,953,112	14,969,387	— 6.8	187,408,656	190,065,151	— 1.4
Gas Produced and Purchased (MCF)						
Natural Gas Produced	12,098,658	13,607,082	—11.1	157,018,706	156,035,318	0.6
Natural Gas Purchased	40,752,804	40,705,651	0.1	470,190,989	448,645,629	4.8
Natural Gas Produced and Purchased	52,851,462	54,312,733	— 2.7	627,209,695	604,680,947	3.7
Manufactured Gas Produced and Purchased	1,259,528	2,874,776	—56.2	17,429,627	32,373,659	—46.2
Total Gas Produced and Purchased	54,110,990	57,187,509	— 5.4	644,639,322	637,054,606	1.2
Company Use and Sales to other Gas Companies	18,881,338	20,348,394	— 7.2	228,384,423	223,138,662	2.3
Net Available for Public Distribution	35,229,652	36,839,115	— 4.4	416,254,899	413,915,944	0.6

*NOTE: Data on number of industrial customers differs from that shown previously owing to changes in classification by several of the reporting companies.

Decline in Gas Utility Sales Less Severe in September

ALTHOUGH sales of both manufactured and natural gas utilities in September continued to average below the levels established during the previous year, the declines were somewhat less severe than for the preceding month, according to the Statistical Department of the American Gas Association.

Operating reports from companies representing 90 per cent of the manufactured gas industry indicate September sales of 26,869,675,000 cu.ft., a decline of 3.5 per cent from September, 1929. The revenues of these companies aggregated $29,495,555 for the month, a drop of approximately 2 per cent.

A group of the larger natural gas companies representing more than 80 per cent of the public utility distribution of natural gas report total sales for September of 31,775,231,000 cu.ft., as compared with 34,267,045,000 cu.ft. reported by these companies for September, 1929, a decrease of 7.3 per cent. Reflecting the generally depressed condition of trade and industry, the most marked decline reported by these companies occurred in sales of natural gas for industrial uses, which were down nearly 14 per cent from the year previous.

This decline in sales of gas for industrial uses characterized practically all sections of the country, both in manufactured and natural gas territory. In New England industrial gas sales for the month were down about 12 per cent from a year ago, but an expansion of some 3 per cent in domestic sales resulted in total sales about equal to September, 1929.

In the East North Central States, including Illinois, Indiana, Michigan, Ohio and Wisconsin, the decline in industrial sales was even more severe, amounting to 18 per cent. In this region domestic sales also declined by 3 per cent, so that total sales for the month were down by more than 7 per cent.

In the Middle Atlantic States, including New Jersey, New York and Pennsylvania, the decline was less severe, amounting to only 1 per cent, but in the South Atlantic States sales for the month were 4 per cent under the preceding year.

GROUP A—NEW ENGLAND STATES

(Connecticut, Maine, New Hampshire, Rhode Island and Vermont.)

(Data reported by 34 companies whose sales constitute 83% of the total sales of manufactured gas in the New England States.)

	Month of September			*Nine Months Ending September 30*		
Customers	*1930*	*1929*	*Per cent Increase*	*1930*	*1929*	*Per cent Increase*
Domestic	1,030,300	1,029,776	0.1			
House Heating	5,596	4,498	24.4			
Industrial and Commercial	34,600	35,461	— 2.4	*See September*		
Miscellaneous	380	305	—			
Total (33 companies which segregate)	1,070,876	1,070,040	0.1			
Grand Total (34 companies)	1,104,538	1,103,930	0.1			
Gas Sales (MCF)						
Domestic	2,363,709	2,297,203	2.9	19,545,709	18,878,309	3.5
House Heating	22,565	31,187	—27.6	2,067,282	1,511,668	36.8
Industrial and Commercial	478,934	540,863	—11.5	4,600,665	5,076,331	— 9.4
Miscellaneous	18,965	20,044	—	207,616	210,558	—
Total (33 companies which segregate)	2,884,173	2,889,297	— 0.2	26,421,272	25,676,866	2.9
Grand Total (34 companies)	2,961,792	2,968,598	— 0.2	27,197,907	26,426,670	2.9
Revenue (Dollars)						
Domestic	3,089,367	3,003,532	2.9	25,478,801	24,630,720	3.4
House Heating	24,416	26,814	— 8.9	1,693,182	1,219,415	38.8
Industrial and Commercial	463,327	533,936	—13.2	4,374,644	5,083,727	—13.9
Miscellaneous	13,775	16,466	—	143,083	174,347	—
Total (33 companies which segregate)	3,590,885	3,580,748	0.3	31,689,710	31,108,209	1.9
Grand Total (34 companies)	3,684,020	3,674,186	0.3	32,566,592	31,963,206	1.9
Gas Produced and Purchased (MCF)						
Gas Produced						
(a) Water Gas	1,260,032	1,322,016	— 4.7	12,505,572	12,173,288	2.7
(b) Retort Coal Gas	750,131	664,169	12.9	6,228,698	6,212,546	0.3
(c) Oil Gas	—	—	—	438	—	—
(d) Coke Oven Gas	324,773	300,218	8.2	3,096,865	2,701,114	14.6
(e) Total Gas Produced	2,334,936	2,286,403	2.1	21,831,573	21,086,948	3.5
Coke Oven Gas Purchased	1,024,698	892,581	14.8	8,240,988	7,653,119	7.7
Total Gas Produced and Purchased	3,359,634	3,178,984	5.7	30,072,561	28,740,067	4.6

NOTE: Of the thirty-four companies reporting, thirty-three segregate customers, sales and revenue monthly, and one company reports only totals. The data shown above for domestic, house heating, industrial-commercial classifications are based only on the reports of the thirty-three companies which segregate items.

Associations Affiliated with A. G. A.

Canadian Gas Association

Pres.—A. T. Leavitt, Hamilton By-Product Coke Ovens, Ltd., Hamilton, Ont.
Sec.-Tr.—G. W. Allen, 21 Astley Avenue, Toronto.

Empire State Gas and Electric Association

Pres.—William J. Welsh, New York & Richmond Gas Co., Staten Island, New York.
Chairman Gas Section—M. F. Clement, Rockland Light & Power Co., Middletown, Ind.
Sec.—C. H. B. Chapin, Grand Central Terminal, New York, N. Y.

Illinois Gas Association

Pres.—H. T. East, Public Service Company of Northern Illinois, Chicago, Ill.
Sec.-Tr.—George Schwaner, 305 Illinois Mine Workers Bldg., Springfield, Ill.

Indiana Gas Association

Pres.—T. L. Kemp, Indiana Consumers Gas & By-Product Co., Terre Haute, Ind.
Sec.-Tr.—P. A. McLeod, Northern Indiana Power Co., Huntington, Ind.

Michigan Gas Association

Pres.—Prof. A. H. White, University of Michigan, Ann Arbor, Mich.
Sec.-Tr.—A. G. Schroeder, Grand Rapids Gas Light Co., Grand Rapids, Mich.

Maryland Utilities Association

Pres.—R. E. Town, Frederick, Md.
Sec.—D. E. Kinnear, 803 Court Square Bldg., Baltimore, Md.

Mid-West Gas Association

Pres.—J. M. Drabelle, Iowa Ry. & Lt. Corp., Cedar Rapids, Iowa.
Sec.-Tr.—Roy B. Searing, Sioux City Gas & Electric Co., Sioux City, Iowa.

Missouri Association of Public Utilities

Pres.—H. M. Patton, Union Electric Light & Power Co., St. Louis, Mo.
Sec.-Tr.—F. D. Beardslee, 315 N. 12th St., St. Louis, Mo.
Asst. Sec.—Jesse Blythe, 103 West High St., Jefferson City, Mo.

New England Gas Association

Pres.—H. Vittinghoff, Stone & Webster, Inc., Boston, Mass.
Exec. Sec.—C. D. Williams, 41 Mount Vernon St., Boston, Mass.
Chairman Operating Div.—A. S. Hall, Springfield Gas Light Co., Springfield, Mass.
Secretary Operating Division—Paul Buchanan, Hartford Gas Co., Hartford, Conn.
Chairman Sales Div.—J. H. Sumner, Cambridge Gas Light Co., Cambridge, Mass.
Sec.-Tr. Sales Div.—A. M. Slattery, Hoffman Heater Co., Boston, Mass.
Chairman Industrial Div.—L. E. Wagner, Providence Gas Co., Providence, R. I.
Sec.-Tr. Industrial Div.—Charles S. Hilton, Pawtucket Gas Co., Pawtucket, R. I.
Chairman Acctg. Div.—Burton Smart, Portland Gas Light Co., Portland, Me.
Sec.-Tr. Acctg. Div.—Otto Price, Boston Consolidated Gas Co., Boston, Mass.
Chairman Manufacturer Div.—J. D. Taylor, Walker & Pratt Mfg. Co., Boston, Mass.
Sec.-Treas. Manufacturers Div.—J. H. McPherson, 250 Stuart St., Boston, Mass.

New Jersey Gas Association

Pres.—Chester Grey, Atlantic City Gas Company, Atlantic City, N. J.
Sec.-Tr.—H. E. Cliff, Public Service Electric & Gas Co., Newark, N. J.

Ohio Gas and Oil Men's Association

Pres.—L. K. Langdon, Union Gas & Electric Co., Cincinnati, Ohio.
Sec.-Tr.—Wm. H. Thompson, 811 First National Bank Bldg., Columbus, Ohio.

Oklahoma Utilities Association

Pres.—T. H. Steffens, Sand Springs Railway Co., Sand Springs, Okla.
Mgr.—E. F. McKay, 1020 Petroleum Bldg., Oklahoma City, Okla.

Pacific Coast Gas Association

Pres.—R. E. Fisher, Pacific Gas & Electric Co., San Francisco, Calif.
Mang. Dir.—Clifford Johnstone, 447 Sutter St., San Francisco, Calif.

Pennsylvania Gas Association

Pres.—E. G. Boyer, Philadelphia Electric Co., Philadelphia, Pa.
Sec.-Tr.—Frank W. Lesley, Pennsylvania Gas & Electric Co., York, Pa.

Pennsylvania Natural Gas Men's Association

Pres.—George E. Welker, United Natural Gas Co., Oil City, Pa.
Sec.-Tr.—B. H. Smyers, Jr., 435 Sixth Ave., Pittsburgh, Pa.

Southern Gas Association

Pres.—A. J. Goss, Chattanooga Gas Co., Chattanooga, Tenn.
Sec.-Tr.—G. H. Schlatter, Birmingham Gas Co., Birmingham, Ala.

Southwestern Public Service Association

Pres.—Knox Lee, Southwestern Gas & Electric Co., Marshall, Texas.
Chairman Gas Section—Frank L. Chase, Lone Star Gas Co., Dallas, Texas.
Sec.—E. N. Willis, c/o University Club, Dallas, Texas.

The Public Utilities Association of Virginia

Pres.—C. B. Short, Roanoke Railway and Electric Co., Roanoke, Va.
Sec.—C. O. Roberson, P. O. Box 537, Roanoke, Va.

Wisconsin Utilities Association

Pres.—M. H. Frank, Wisconsin Power & Light Co., Madison, Wis.
Exec. Sec.—J. N. Cadby, 105 Wells St., Milwaukee, Wis.

Thirteenth Annual Convention of the American Gas Association
Atlantic City, N. J. - - - October 12-16, 1931

Employment Bureau

SERVICES REQUIRED

Sales engineers to handle line of motor operated valves, low temperature pressure and combustion safety controllers. Men 25 to 35 years with college training preferred. Familiarity with process control field advantageous. **0167.**

Experienced gas appliance **salesmen** wanted by Holding Company for service in small gas plants. Only men who can sell and are ambitious are desired. Salary and commission. Write full qualification. **0172.**

Manager for small gas property in the Southeast owned by holding company. State experience, references, and salary desired. **0177.**

Rate engineer for company in middle West; knowledge of rate making and rate structure necessary and engineering and accounting experience desirable. Salary about $4,000. **0179.**

Practical experienced industrial gas equipment **salesman** for established line of burners, and special equipment. Headquarters, New York City. Write fully as to experience, etc. **0180.**

General Manager or Operating Vice-President for well-established Natural Gas Company wholesaling its product in Appalachian field. Must have had actual experience, have good personality, be capable executive, good trader with experience in the selection and development of acreage, active, energetic, loyal, reliable, with unblemished record for integrity. Address, giving full record of business, personal history and salary requirements with references. Replies will be regarded as confidential. **0182.**

Experienced, honest-to-goodness, hard-hitting gas range **salesmen** for Metropolitan New York, New Jersey and the New England Territory. **0183.**

Three **technical graduates,** between 28 and 40, with experience in modern gas plant practice and accustomed to handling men. Southern location. Salary up to $300 per month. **0184.**

Experienced **industrial** and **house-heating salesmen** at once for Southern location in natural gas territory; salary and commission basis. **0187.**

Large utility in the South wants Industrial **gas salesman** with experience in power and large heating boiler applications. **0188.**

Working superintendent experienced in production and distribution of coal gas; give age, references, salary wanted and when available. **0189.**

Industrial gas **salesman,** experienced and qualified on househeating work and application of gas heating to all forms of manufacturing. Salary in the neighborhood of $3,000 per year, location central East. **0190.**

Gas Superintendent, experienced in water-gas manufacture to have charge of manufacture and distribution; plant manufacturing one and one-half million per day; must understand manufacture and high- and low-pressure distribution thoroughly and be a general all around gas man capable of meeting the public as well. Salary to start $3,600 per year. **0191.**

Gas Engineer thoroughly grounded in coal and water-gas operating, capable of designing coal and water-gas plants up to two million cubic feet per day; familiar with high- and low-pressure distribution and with some knowledge of natural gas. Will be employed in the Engineering Department of a large utility under a Chief Engineer, and associated with a large group of electrical, mechanical, and civil engineers. Salary to start $3,600 per year. **0192.**

Engineer to take charge of Gas Boiler Division, experienced in both laboratory work and district installation. Location East; salary commensurate with qualifications and experience. **0193.**

Well qualified **Division Manager** to have complete operating responsibility in a number of properties, preferably with knowledge of both natural and manufactured gas. **0194.**

Manager for rapidly expanding territory with experience in manufactured or natural gas. **0195.**

Superintendent, with knowledge of coal gas, to take charge of gas department about 1,000 meters; happy future and excellent opportunity for good practical man also interested in merchandising. **0196.**

SERVICES OFFERED

Executive of proven ability with several million dollar corporations desires position of general manager. Can give satisfactory references regarding character and ability. **363.**

Engineer with technical and practical experience in all branches of gas manufacture desires position. No objection to foreign location. **364.**

Comptroller—with complete knowledge of public utility accounting procedure, seeks connection as Comptroller, Treasurer, or Office Manager. Seven years' experience as Comptroller and Assistant Treasurer, supervising Accounting Department. Wide meeting the public as well. Salary to start General and Commercial Accounting. **365.**

PLACING TRAINED PERSONNEL

Whether it is "a man for a job" or "a job for a man" A. G. A. Headquarters is equipped to assist in making a suitable selection by either or both of the following methods: the first is the advertisements which appear on this page under Services Required or Services Offered; the second is the confidential classification records filed with the Employment Bureau for consultation by those interested in securing executives, engineers, operators and salesmen.

Consider the effect of a well phrased and *neatly typewritten record* upon a busy executive, seeking his man from these silent, but very eloquent, records of qualifications.

Gas engineer—technical man, experienced in routine operation of coal and water gas plants, expert in operation, distribution, plant design and construction and familiar with recent methods of production, desires position with operating or engineering company. **366.**

Home Service Director, familiar with every phase of Home Service work; technical knowledge of natural, manufactured and butane gas, as well as all household gas and electrical appliances, desires change of position. Free to travel or settle in any part of the United States. **367.**

Technically trained gas engineer, thoroughly familiar with construction and operation of coal gas production and auxiliary equipment. Fourteen years unusually broad experience in supervision of design and construction; has secured marked reduction in costs. **368.**

Assistant to Operating Engineer or General Manager; experience in construction, manufacture and distribution; aggressive and ambitious; obtains results. **369.**

Manager or superintendent with twenty-three years' experience in all branches of manufactured gas industry seeks position in production, construction or distribution. Has managed several small properties. **370.**

Position as District Manager of a medium size property. Technical graduate, nine years' experience in all branches of gas industry. At present employed as Manager. **371.**

Executive with twenty years' experience in all phases of the gas and electric industry, seeking a connection where his managerial ability can be employed. Has held important and responsible positions. Good organizer with a record as an economical operator. Particularly successful in improving customer relations. **372.**

Natural gas company executive (42) having had twenty-five years' experience in all branches of the industry. At present employed with large gas utility. **373.**

Manager of gas company or industrial fuel sales-mechanical-engineer. Experience covers successful national connection, plant design, construction, operation, business administration, fuel sales and engineering, in the gas industry nationally. Thoroughly capable of taking charge of a responsible situation from both an executive and engineering standpoint, particularly with a large holding company. **374.**

Engineer (33) with fourteen years' experience in gas property appraisals and inventories, rate work, new business and extension projects, statistical and cost work, together with general civil engineering in connection with natural gas property operations. Favorably employed at present, as a department head, but desires a change of location preferably to Ohio or the Middle West. **375.**

Industrial gas sales engineer, college graduate, experienced in marketing natural gas, to refineries, glass companies, paint companies, ceramic, power and ice plants, salt companies and heat treating plants. Familiar with design and construction of metering, regulating and burning equipment for industrial application. **376.**

Manager-Superintendent. Twelve years' experience as superintendent of water gas production and general manager; experienced in safety supervision and public relations work; desires position requiring some or all of above experience; age 35; married; technical graduate; prefer southern location; will consider foreign assignment. **377.**

Executive with public utility experience qualified to specialize on rate analysis, electric or gas, desires engagement. **378.**

Manager of gas properties. Twenty years' experience in all phases of the gas industry; comprehensive knowledge of manufacturing, transmission and distribution, with engineering, designing and construction of properties. Good at gaining and holding proper public relations, getting new business and in merchandising. **379.**

Gas engineer, specializing principally in distribution and service improvement, is open for either temporary or permanent position. **380.**

Graduate engineer—experienced in design, construction and operation of transmission lines, medium and low pressure distribution plants, in both manufactured and natural gas; desires position with operating or engineering company. **381.**

Engineer, design or sales. Experience carbonizing plant, auxiliary equipment, structural and general engineering. Good organizer and leader. Accurate estimator. Desires similar work or position where organizing ability would be useful. **382.**

Manager and engineer, technically sound, well educated with unusually varied experience of twenty years, thorough understanding of economics of different processes including Reforming of Natural Gas and Oil Gas, By-Product Utilization, Raw Materials and Unit Costs. Accustomed to planning and carrying out improvements, high and low pressure distribution layout. **383.**

Gas engineer, M.E. degree. Many years' experience in construction and operation; engineer of production and engineer of distribution of large companies, water gas, coal gas; sale of by-products, appraisals, estimates, budgets, designing, and natural gas conversion. **384.**

Advisory Council

D. D. Barnum ..... Boston, Mass.
H. E. Bates ..... Chicago, Ill.
T. R. Beal ..... Poughkeepsie, N. Y.
J. M. Bennett ..... Philadelphia, Pa.
R. B. Brown ..... Milwaukee, Wis.
Howard Bruce ..... Baltimore, Md.
J. J. Burns ..... St. Louis, Mo.
H. C. Clark ..... Newark, N. J.
C. M. Cohn ..... Baltimore, Md.
J. L. Conover ..... Newark, N. J.
Geo. B. Cortelyou ..... New York, N. Y.
F. G. Curfman ..... New York, N. Y.
P. H. Gadsden ..... Philadelphia, Pa.
E. Frank Gardiner ..... Chicago, Ill.
R. C. Hoffman, Jr. ..... Atlanta, Ga.
G. M. Karshner ..... Brooklyn, N. Y.
J. B. Klumpp ..... Philadelphia, Pa.
C. C. Krausse ..... Baltimore, Md.
R. M. Leach ..... Taunton, Mass.
J. P. Leinroth ..... Newark, N. J.
H. O. Loebell ..... New York, N. Y.
F. C. Mackey ..... Chicago, Ill.
T. N. McCarter ..... Newark, N. J.
N. C. McGowen ..... Shreveport, La.
S. W. Meals ..... Pittsburgh, Pa.
H. C. Morris ..... Dallas, Texas
C. A. Munroe ..... Chicago, Ill.
Geo. W. Parker ..... St. Louis, Mo.
F. H. Patterson ..... Rochester, N. Y.
F. H. Payne ..... Erie, Pa.
B. V. Pfeiffer ..... Philadelphia, Pa.
Edward Porter ..... Philadelphia, Pa.
C. R. Prichard ..... Lynn, Mass.
H. S. Schutt ..... Philadelphia, Pa.
W. E. Steinwedell ..... Cleveland, Ohio
A. L. Tossell ..... Chicago, Ill.
H. Leigh Whitelaw ..... New York, N. Y.
George E. Whitwell ..... Pittsburgh, Pa.

AMERICAN GAS ASSOCIATION, INC.

HEADQUARTERS, 420 LEXINGTON AVE., NEW YORK, N. Y.

Officers and Directors

President	C. E. PAIGE	Brooklyn, N. Y.
Vice-President	R. W. GALLAGHER	Cleveland, Ohio
Vice-President	N. C. McGOWEN	Shreveport, La.
Vice-President	ARTHUR HEWITT	Toronto, Ont.
Treasurer	WILLIAM J. WELSH	Staten Island, N. Y.
Managing Director	ALEXANDER FORWARD	New York, N. Y.
Assistant Manager	H. W. HARTMAN	New York, N. Y.
Secretary	K. R. BOYES	New York, N. Y.
Director, Publicity-Advg.	KEITH CLEVENGER	New York, N. Y.
Departmental Vice-Pres.	H. C. COOPER	Pittsburgh, Pa.
Sectional Vice-Pres.	D. M. MACKIE	Jackson, Mich.
Sectional Vice-Pres.	J. I. BLANCHFIELD	Brooklyn, N. Y.
Sectional Vice-Pres.	D. W. CHAPMAN	Chicago, Ill.
Sectional Vice-Pres.	E. S. DICKEY	Baltimore, Md.
Sectional Vice-Pres.	R. G. GRISWOLD	New York, N. Y.
Sectional Vice-Pres.	E. R. ACKER	Poughkeepsie, N. Y.

H. C. ABELL	New Orleans, La.	SAMUEL INSULL, Jr.	Chicago, Ill.
WALTER C. BECKJORD	Boston, Mass.	CONRAD N. LAUER	Philadelphia, Pa.
RAYMOND CROSS	Columbus, Ohio	F. A. LEMKE	Kalamazoo, Mich.
J. D. CREVELING	New York, N. Y.	A. B. MACBETH	Los Angeles, Calif.
J. S. DeHART, Jr.	Newark, N. J.	FRED A. MILLER	Bradford, Pa.
HENRY L. DOHERTY	New York, N. Y.	A. E. PEIRCE	Chicago, Ill.
O. H. FOGG	New York, N. Y.	HERMAN RUSSELL	Rochester, N. Y.
F. C. FREEMAN	Providence, R. I.	ARTHUR STOCKSTROM	St. Louis, Mo.
F. T. HULSWIT	New York, N. Y.	P. S. YOUNG	Newark, N. J.
		B. J. MULLANEY	Chicago, Ill.

Section and Department Officers

NATURAL GAS—		
Chairman	H. C. COOPER	Pittsburgh, Pa.
Vice-Chairman	H. L. MONTGOMERY	Bartlesville, Okla.
Secretary	E. J. STEPHANY	Dallas, Texas
ACCOUNTING—		
Chairman	J. I. BLANCHFIELD	Brooklyn, N. Y.
Vice-Chairman	WILLIAM A. DOERING	Boston, Mass.
Secretary	H. W. HARTMAN	New York, N. Y.
COMMERCIAL—		
Chairman	E. R. ACKER	Poughkeepsie, N. Y.
Vice-Chairman	SAMUEL INSULL, Jr.	Chicago, Ill.
Secretary	J. W. WEST, Jr.	New York, N. Y.
INDUSTRIAL GAS—		
Chairman	D. W. CHAPMAN	Chicago, Ill.
Vice-Chairman	A. J. PETERS	New York, N. Y.
Secretary	C. W. BERGHORN	New York, N. Y.
MANUFACTURERS'—		
Chairman	E. S. DICKEY	Baltimore, Md.
Vice-Chairman	DAVID F. KAHN	Hamilton, Ohio
Vice-Chairman	W. E. STEINWEDELL	Cleveland, Ohio
Secretary	C. W. BERGHORN	New York, N. Y.
PUBLICITY AND ADVERTISING		
Chairman	D. M. MACKIE	Jackson, Mich.
Vice-Chairman	WILLIAM H. HODGE	Chicago, Ill.
Secretary	ALLYN B. TUNIS	New York, N. Y.
TECHNICAL—		
Chairman	R. G. GRISWOLD	New York, N. Y.
Vice-Chairman	I. K. PECK	Chicago, Ill.
Secretary	H. W. HARTMAN	New York, N. Y.
Asst. Secretary	K. H. CREE	New York, N. Y.